

# THE DOCK & HARBOUR AUTHORITY

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## Editorial.

### *The Port of Gefle, Sweden.*

The subject for this month's supplement is the Port of Gefle, which is situated in the southern part of Sweden, about 120 miles north of Stockholm.

In latter years this port has shown remarkable increases in traffic figures, the peak year being 1927, when the total tonnage turnover at the port was 2,060,665 tons.

The entrance to the harbour of Gefle is by means of a roadstead with two approaches; the eastern one having a depth of 5 metres, and the northern one a depth of 7.1 metres. The outer roadstead itself is well protected and affords room for a large number of vessels with safe anchorage, the depth varying from 12 to 18 metres.

With regard to quayage and equipment, the length of quayage available for sea-going vessels is about 5,000 metres. In addition, there are quays for local lighter traffic and similar purposes, and also for goods in private ownership.

At Fredriksskans there are nine 5-ton electrical portal cranes, two 5-ton electric bridge cranes, two 8½-ton electric bridge cranes; and in the inner harbour there are two 2½-ton travelling bridge cranes, three 2-ton stationary electric revolving cranes, one 15-ton hand crane, and one 45-ton sheer-legs.

At Fredriksskans there is 20,000 square metres of storage space available, and in the inner harbour 254,800 square metres of storage space, some partly built on.

Regarding drydocking and repairs, there is a shipyard and slipway with a lifting capacity of 1,400 tons.

An illustrated article on the Port of Gefle appears on another page, giving full details.

### *De-rating Benefits.*

Notable reductions have been made by the Mersey Docks and Harbour Board in the port charges of Liverpool, consequent upon the Government de-rating scheme. The Minister of Transport has approved of the reduced town dues in respect of empty tierces, and also of the revised town due in connection with the reduced dock rates and town dues to come into operation on March 1st, 1930. The Board has decided to continue the arrangement under which reduced dock tonnage rates have been charged in respect of foreign going vessels discharging cargo at Liverpool, of which the gross weight has not exceeded ten per cent. of the vessel's net register tonnage, after adding thereto the tonnage measurement of any inward deck cargo. Mr. H. C. Roxburgh stated at the February meeting of the Board that they had already adopted a very extensive list of reductions in dock rates and town dues and haulage charges, consequent upon the derating scheme. Since then they had carefully considered a further list of reductions in dues, and these were now ready to be put in operation as from the 1st of March next. Among other reductions, a substantial concession had been made in the inward dues on hides and skins which should assist the tanning industry. The inward dues on rice, bran and meal had been substantially reduced which should materially help the seed and oil cake trades. Cocoa was another article which had benefited. The dock tonnage rates on tankers using the Dingle oil jetties had been further reduced, and petroleum oil, in bulk, had been included in the list of differential articles discharged at Birkenhead. These concessions should greatly assist the oil companies on both sides of the river. Vessels discharging cargoes of oil or spirit at the Dingle jetties will be charged only fifty per cent. of the full dock tonnage rates for the time being chargeable in respect of such vessels if discharged in any dock of the Board on the Liverpool side of the Mersey, in lieu of the seventy-five per cent. of such rates now charged. Petroleum

oils and residuum, in bulk, will be added to the list of articles in connection with which 75 per cent. of the full dock tonnage rates on the importing vessel and 75 per cent. of the full inward dock rates and town dues on the specified articles are levied when such articles are discharged in the Board's docks at Birkenhead.

### *The Institution of Civil Engineers.*

The Institution of Civil Engineers are holding an ordinary meeting on Tuesday, 11th March, at 6 p.m., when the following papers are to be submitted for discussion:—"Reconstruction of Liskeard Viaduct, and Scheme for Reconstruction of the Approach Spans of the Royal Albert Bridge, Saltash," by Harold Duke Smith, M.Inst.C.E.; "Reconstruction of Approach Spans, Royal Albert Bridge, Saltash," by Frank Gibbons, B.A., B.A.I., Assoc.M.Inst.C.E.; "Reconstruction of Kent and Leven Viaducts, Furness Section of the London, Midland & Scottish Railway," by James Alexander, M.Inst.C.E. A ballot for new members will take place.

An informal meeting will be held on Wednesday, 12th March, at 6 p.m., when the subject for discussion will be:—"Land-Reclamation Work," by Francis Maurice Gustavus Du-Plat-Taylor, M.Inst.C.E. Sir Cyril Kirkpatrick, Vice-President, will take the chair.

A students' meeting takes place on Wednesday, 5th March, at 6.30 p.m., when the following paper will be read:—"Long-Distance Gas-Transmission," by Henry Frank Harding Jones, B.A., Stud.Inst.C.E. Mr. Thomas Hardie, M.Inst.C.E., will take the chair.

### *Manchester Ship Canal.*

According to the annual report of the Manchester Ship Canal Company for the year 1929, issued on the 14th February, despite the reduction of charges in the last quarter, passing on to users the benefit of partial derating under the Local Government Act, the receipts in Ship Canal tolls, dues, etc., showed an increase of £11,766 on the 1928 amount; the sea-borne traffic, 6,344,055 tons, was the second largest in the company's history, being only 190,000 short of being a record; and the Ship Canal working expenses were reduced by £17,340. The principal decreases were under the heads of dredging and maintenance of the Ship Canal, traffic expenses and rates. The financial results are summarised thus:—The net receipts of the whole undertaking amounted to £854,225, and miscellaneous receipts (rents, interest, etc.) to £47,779; total £902,004. Deduct: Miscellaneous charges (chief rents, wayleaves, etc., rent of grain elevators, docks, and transit sheds) £105,250, leaving as net revenue £796,754. Adding £16,498 brought forward, the total is £813,252.

### *Another Bridge across the River St. Lawrence.*

Steps are likely to be taken shortly in the direction of building another highway traffic bridge over the St. Lawrence River from Lachine to Caughnawaga—just west of Montreal, preliminary plans in respect of which were completed some time back by the Provincial authorities. In 1928 the Legislature of Quebec created the Corporation of Lake St. Louis bridge, and the cost was then estimated at \$1,700,000 towards which a contribution of \$600,000 is expected from the Dominion Government.

The proposed bridge will relieve the constantly increasing traffic over the Victoria Bridge, reducing the distance travelled by 16 miles.

## Dock and Harbour Authorities' Association.

### Report of the Executive Committee for the Year ended 31st December, 1929.

**T**HE Annual General Meeting of the above Association was held at the offices of the Port of London Authority, E.C.3, on Wednesday, February 19th, 1930, when the committee presented the tenth report of the proceedings of the Association, which was adopted.

#### Meetings.

In addition to the annual general meeting of the Association on February 20th, 1929, there have been seven meetings of the Executive Committee and 25 meetings of sub-committees during the year.

As usual, the Association has been represented at numerous conferences with Ministers and Government Departments and at meetings with other bodies.

Thirty circulars, including two interim or progress reports (May and September), have been issued to members on various matters of interest occurring during the year. (A list of the principal ones is given at the end of the report.)

#### Executive Committee.

The committee again elected Mr. R. D. Holt, the Chairman of the Mersey Docks and Harbour Board, as their Chairman for the year.

The committee regret to record the death during the year of their Parliamentary Chairman, the Right Hon. T. P. O'Connor, M.P., and also the death of Mr. E. Latimer.

It is interesting to recall that Mr. T. P. O'Connor occupied the chair at the meeting of the dock and harbour authorities held on December 2nd, 1919, when it was decided to form the Association, and has since then been the Parliamentary Chairman. Mr. O'Connor has helped the Association on numerous occasions, and he was largely responsible for bringing about the arrangement come to in 1916 for the payment of dock and harbour dues and charges by the Government during the war, which led up to the present arrangement of December, 1920.

Mr. Latimer represented the Manchester Ship Canal Company on the Executive Committee from the formation of the Association, and had been an active member of the previous Dock Owners' Committee. His work on the Executive Committee and on a number of sub-committees has been extremely valuable to the Association.

Mr. F. A. Eyre was appointed to take Mr. Latimer's place for the remainder of the year under Rule 7 (1) (E), and was also appointed to succeed Mr. Latimer as a trustee of the Association's property and funds.

#### Sub-Committees.

The following were appointed during the year:—

**Railway Matters.**—Mr. J. H. Estill, Mr. M. Kissane, Mr. James Macfarlane, Mr. T. A. Peace, Mr. L. A. P. Warner, and the Hon. Secretary, with Mr. J. D. Ritchie and Mr. E. A. Moorhouse added for Railway Rates Inquiry questions and the Railway Bills of the Session.

**Dock and Factory Matters.**—Mr. Kissane, Mr. Macfarlane, Mr. Peace, Mr. Warner, Mr. G. S. Maskall, and the Hon. Secretary, with Mr. Ritchie and Mr. Moorhouse added for the purposes of (a) the Factories Bill, and (b) Dock Police—Exchequer Grant, and Sir John H. Irvin added for the purposes of (b).

**Customs Hours at Docks and Warehouses.**—Mr. Maskall, Mr. Peace, Mr. Warner, and the Hon. Secretary.

**International Maritime Conventions.** Mr. Roger Clayton, Major E. G. Finch, Mr. Ritchie, and the Hon. Secretary.

**Duties, etc., of Harbour and Pilotage Authorities.**—Mr. B. L. Nairn, Major Finch, and the Hon. Secretary.

**Subscriptions of Harbour, Conservancy, Irish Free State, and Pilotage Authorities.**—The Chairman, Mr. W. Hewat, and the Hon. Secretary.

**Rating and Valuation Matters.**—Mr. D. O. Dunlop, Mr. Moorhouse, Mr. Ritchie, Mr. O. W. Young, and the Hon. Secretary, with Mr. Kissane added for the Local Government Bills.

**Buoyage and Lighting of Coasts.**—Commander J. Whitla Gracey, R.N.R., Captain F. W. Mace, R.N.R., Mr. D. Alan Stevenson, and the Hon. Secretary, with Major Finch, Mr. Ritchie and Mr. J. H. Amos added for River Pollution questions.

**Coast Protection Bill.**—Mr. Ritchie, Mr. Moorhouse, Mr. Kissane, Mr. F. F. Smith, and the Hon. Secretary.

#### Members.

The Association this year comprised 47 authorities, with a tonnage (excluding Irish Free State and pilotage, etc., authorities, not covered by the Board of Trade returns) representing nearly 70 per cent. of the total tonnage of vessels with cargoes arriving at and departing from the ports of the United Kingdom.

During the year two authorities joined the Association.

#### Bills in Parliament.

The undermentioned Bills were considered amongst others, and action was taken where necessary to protect the interests of the members:

##### I.—Session 1928-29.

(1) Bills which received the Royal Assent in 1929:—

(a) Public Acts.	
Local Government	March 27th
Local Government (Scotland)	May 10th
Bridges	May 10th
(b) Private Acts.	
Four Railway Acts and four Railway (Air Transport) Acts, viz.:—	
Great Western Railway (2)	May 10th
L.M. and S. Railway (2)	Do.
L. and N.E. Railway (2)	Do.
Southern Railway (2)	Do.

(2) Bills which did not pass into law:—

Crown Proceedings.  
Workmen's Compensation.

##### II.—Present Session, 1929-30.

(1) Bills which received the Royal Assent in 1929:—

Public Acts.	
Development (Loan Guarantees and Grants)	July 26th
Expiring Laws Continuance	Dec. 20th

(2) Bills brought over from previous Session:—

Private Act.	
Clyde Navigation	July 26th

(3) Bills pending:—

Coast Protection. Reservoirs (Safety Provisions). Tolls.  
Road Traffic. Workmen's Compensation (No. 2). Canal Boats.

(4) Bill withdrawn:—

Annual Holiday.

#### Local Government Act, 1929; Local Government (Scotland) Act, 1929; Rating and Valuation (Apportionment) Act, 1928; De-rating of Railway, Canal and Dock Undertakings.

The first two of the above Acts, which were introduced in November, 1928, and are referred to on pages 14 to 16 of the report for that year, received the Royal Assent on March 27th and May 10th, 1929, respectively.

During their passage through Parliament they received careful attention at the hands of the sub-committee appointed for that purpose, and some useful amendments, particularly in the first House, were secured.

Attention is especially directed in the first Act (for England and Wales) to Section 68 (Relief from rates in respect of industrial and freight transport hereditaments), Section 70 (Amendment of valuation lists on or after appointed day and making of subsequent lists), Section 73 (Deductions from inclusive rents of industrial hereditaments in respect of rate relief), and to Section 136 (Transmission of benefit of rate relief in respect of freight transport hereditaments) which applies also to Scotland, also to the Scottish Act, Part II. (Rating of agricultural, industrial, and freight transport lands and heritages).

Section 73 of the former Act provides that where rates in respect of an "industrial hereditament" are payable by the landlord and the tenant pays rent inclusive of those rates, the landlord must pass on the benefit of rate relief to the tenant.

A private Member had set down an amendment by way of a new clause to apply the relief to tenants of "freight transport" as well as "industrial" hereditaments. The amendment was not reached in Committee, and on Report Stage the Minister of Health put down and carried a similar amendment (Section 73), but limited to "industrial" hereditaments, the Association having in the meantime represented to the Minister reasons why the amendment should not apply to "freight transport" hereditaments.

In connection with the derating of property under the above Acts, the Executive Committee and the Rating Sub-Committee have had a number of cases brought under notice, and they would refer members to what they have written in Circulars 171 and 176.

In several cases instructions have been given by the Government that the derating for premises on dock estates which have been leased to third parties is not to be objected to on that ground alone by Revenue Officers.



*Dock and Harbour Authorities' Association—continued.*

There may, however, be some cases not only on this but on other points still unsettled. The committee therefore repeat their request made on behalf of the members in general that questions of principle arising on the three Acts should be brought to the notice of the Association as quickly as possible.

**Bridges Act.**

This Bill, as introduced into the House of Lords, embodied an agreement come to between railway Companies, canal Companies, and County Councils, with the approval of the Ministry of Transport.

The object of the Act is to facilitate the improvement, and, where necessary, the reconstruction of weak bridges, for the maintenance and repair of which some person or body other than a highway authority is responsible.

The Bill contained many provisions for the protection of railway and canal Companies in the direction of requiring the consent of these authorities before their bridges could be dealt with. The committee were able, with the help of Lords Ritchie and Clwyd and the late Lord Younger, to obtain the same protection for dock and harbour authorities by amendments in the House of Lords (Sections 4 and 6 of the Act), which were accepted by the Government.

**Development (Loan Guarantees and Grants) Act, 1929; Schemes for the Relief of Unemployment.**

This Act, which was one of the first measures of the present Government, received the Royal Assent on July 26th. It sets up Committees to consider schemes and advise the Treasury, who may, under—

**Part I.**, Section 1 (1), "guarantee . . . the payment of the principal of and interest on, or of either the principal of or interest on, any loan . . . for the purpose of meeting capital expenditure to be incurred under a scheme for development, reconstruction, or re-equipment in connection with a public utility undertaking in Great Britain."

Section 2 (1), "make . . . grants for the purpose of assisting persons carrying out any public utility undertaking in Great Britain in defraying in whole or in part during a period not exceeding 15 years . . . the interest payable on any loan to be raised for such purpose as is mentioned in Sub-section (1) of Section 1."

**Part II.**—The Minister of Labour is empowered, with the approval of the Treasury and on the recommendation of a Committee appointed by him, to make grants to bodies of persons—viz., local authorities and statutory bodies carrying on undertakings under statutory powers otherwise than for profit, towards any expenditure to be incurred for the purpose of carrying out works of public utility calculated to promote unemployment.

**Parts I. and II.**—A Committee called the Development (Public Utility) Advisory Committee has been set up, under the chairmanship of Sir Arthur Duckham, to deal with schemes under Part I., and the existing Unemployment Grants Committee has been appointed the Committee for Part II. of the Act.

At the invitation of the Lord Privy Seal (Mr. J. H. Thomas) and the Minister of Transport (Mr. Herbert Morrison), representatives of the Association met those Ministers on July 19th, when schemes for the relief of unemployment were discussed.

Mr. Thomas's speech on that occasion, at his request, has been sent to the members of the Association (Circular 173), and by that and further Circulars (Nos. 176, 177, 182, and 183) they have been kept informed of the Government's intentions and the proceedings and proposals of the two Committees.

It is understood that a number of the members have submitted proposals, which are awaiting the approval of the Treasury.

The Ports Facilities Committee of Great Britain appointed by the Chamber of Shipping, comprising representatives of that Chamber, the Association of British Chambers of Commerce, and the Federation of British Industries, in their report dated November 12th, 1929, put forward schemes and suggestions (p. 15 and App. 1 Overseas Trade and p. 18 and App. 2 Coasting Trade) for improvements and further facilities at a number of ports, with a recommendation that these should be included in the proposals which port authorities concerned may be submitting to the Government.

On the occasion of the presentation of the report to the Ministry of Transport by the Chamber of Shipping, the Federation of British Industries, and the Association of British Chambers of Commerce, the Permanent Secretary, Sir Cyril Hurcomb, who received the deputation, in his reply ("Times," January 9th, 1930), said:—

"He noted that shipowners appreciated the fact that the responsibility for submitting such applications rested with the Port Authority, but that responsibility was greatly aided by the work of the Port Facilities Committee, which was also of value to the Ministry in advising the Government in regard to applications. He referred to the terms of assistance which could be granted by the Unemployment Grants Committee and the Development (Public Utility) Advisory Committee. While agreeing that the latter Com-

mittee limited their recommendations for grants to items properly chargeable to capital account, he assured the Deputation that the two Committees realised the position which might arise if different classes of Port Authority were treated on a substantially different basis, and that, therefore, in their general treatment of all applications they would preserve the fair balance between different classes of authorities as promised by the Lord Privy Seal."

**Coast Protection Bill.**

This measure was read a second time on October 29th in the House of Commons and committed to a Standing Committee. It has, however, not made any further progress up to the present. The Bill is based on the final report of the Royal Commission on Coast Erosion dated 1911 (Cmd. 5708).

Three main objects of the Bill are:—

- 1.—The transfer to the Board of Trade of the management of such parts of and interests in Crown foreshore as are now under the management of the Commissioners of Crown Lands.
- 2.—The grant to the Board of Trade of powers over the operations of harbour and other authorities who are responsible for the control and management of waterways and coast preservation.
- 3.—The setting up of new and the re-organisation of existing coast protection authorities.

The Bill is much more far-reaching than appears from the title, because it proposes to confer on the Board of Trade powers over all tidal waters of navigable rivers and brings the banks of such rivers within the meaning of "coast."

Mr. Graham White, one of the Members for Birkenhead, spoke on Second Reading on behalf of the Association (Official Reports, H. of C., October 29th, Cols. 81-5), putting forward the main points which would have to be considered in Committee for the protection of existing interests.

The Bill has been carefully considered by a sub-committee of the Association, who have had several interviews with the Board of Trade officials. Several points raised by the Association will be met by Government amendments, and on other points amendments have been set down by Mr. Graham White, Sir Robert Aske, and Viscount Elmley to protect dock and harbour authorities.

**Tolls Bill.**

This Private Members' Bill has passed Committee Stage in the House of Commons and has been set down for consideration on May 9th.

The object of the Bill is to free bridges or roads from tolls, and highway authorities are empowered to serve notices on toll owners in their area requiring the transfer of the property, rights, and liabilities of the toll owner, compensation in case of dispute to be settled by arbitration.

After the transfer the highway authority can only continue to charge tolls for a period to be fixed by the Ministry of Transport (Clause 3).

On Committee Stage Mr. Rosbotham, M.P., on behalf of the Association, moved a new clause to the effect that the Act should not apply to the roads or bridges of dock or harbour authorities without their consent. The clause was accepted and now forms part (Clause 6) of the amended Bill (No. 79).

**Road Traffic Bill.**

This Bill passed Committee in the House of Lords last December, but some of the amendments put down on behalf of the Association, and moved by Lords Ritchie and Clwyd, were not then accepted.

Attention is drawn to an important amendment made on Committee Stage—viz., that regulations to be made by the Minister of Transport (Clause 93, amended Bill No. 57) shall not be made unless both Houses by resolution approve the draft. In the Bill as introduced such regulations (Clause 99), after having been laid before both Houses for 28 sitting days, would have come into force unless an address had been presented to His Majesty by either House that the Regulations be annulled.

Part V. of the Bill as introduced empowered local authorities to run public service vehicles within and without their district. An amendment preventing the local authorities from running such vehicles on roads of dock and harbour authorities except with the consent of those authorities was moved by Lord Clwyd for the Association and carried, but subsequently the whole of Part V. was struck out by the House of Lords in Committee.

Before the Report Stage the sub-committee met the officials of the Ministry of Transport and explained the reasons for the Association's amendments. In the result, Earl Russell, who was in charge of the Bill, moved amendment (H. of L. Reports, Vol. 76, Nos. 41 and 42) satisfactory to the Association on Report to Clauses 24, 45, 48, and 81 (Bill No. 57).

**The Railway Companies' Applications for Increased Rates and Charges at their Docks.**

(a) **Bills in Parliament.**—The Bill of last Session of each of the four railway Companies contained a clause seeking to extend for five years the increased charging powers at docks granted to the Companies by their respective Dock Charges

## Dock and Harbour Authorities' Association—continued.

Acts, 1924. The 1924 increases were 60 per cent. above pre-war rates on ships and goods and increased tipping charges for coal and coke granted for a term of five years.

The extension of time was strenuously opposed by, *inter alia*, the Chamber of Shipping, coal owners, and other bodies on the ground not only that the increases should not be continued but that the Companies should have applied to the Minister of Transport for temporary Orders under the Harbours, Docks, and Piers (Temporary Increase of Charges) Acts, 1920 and 1922, for Orders authorising increased charges.

In the result the Committee of the House of Commons struck out the clauses to extend the time fixed by the 1924 Acts.

(b) **Applications to the Minister of Transport.**—The Companies then applied to the Minister of Transport for temporary increase of charges Orders under the 1920 and 1922 Acts.

The railway Companies asked for an increase of 75 per cent. on the rates for ships and goods in force in 1913 and for tipping charges in certain cases beyond those granted by the 1924 Acts.

The Minister referred these applications to the Rates Advisory Committee set up under the Ministry of Transport Act of 1919.

The applications were again strongly opposed by the coal and other trading interests.

The inquiry lasted 13 days, and the Minister of Transport, on the recommendation of the Committee, made Orders extending for a period of twelve months from October 2nd, 1929, the existing rates (60 per cent. above pre-war) on ships and goods at the railway Companies' dock and harbour undertakings, with certain modifications in connection with the charges for tipping coal and coke.

The Committee's Report to the Minister, dated August 23rd, 1929, was published in the autumn.

The Association did not appear at the inquiry, but sent the following letter to the Minister of Transport in support of the railway Companies' applications. The Minister forwarded the letter to the Rates Advisory Committee, and copies were sent to the railway Companies:—

Dock and Harbour Authorities' Association,  
13, Victoria Street, S.W.1.  
4th July, 1929.

Sir,  
**Harbours, Docks and Piers (Temporary Increase of Charges) Acts, 1920 and 1922.**

Application for Increase of Charges at Docks and Harbours owned by the Railway Companies.

"The four Railway Companies gave notice in the 'London Gazette' of the 7th June, 1929, that they had applied to the Minister of Transport for Orders under the above Acts to modify the Statutory Provisions and authorise the Companies to levy increased charges as set out in the Notices for a period of 12 months from the 1st October, 1929, at the various docks and harbours mentioned in the four Notices respectively.

"The main increase proposed of an addition of 75 per cent. above the Rates, Dues and Charges in operation on the 31st December, 1913, is common to all the applications, but the charges described as 'crane charges' and charges for 'shipping' or 'tipping' coal and coke vary in amount in the applications.

"The main increase proposed of 75 per cent. over pre-war charges is in place of the 60 per cent. increase over those charges authorised by the various Temporary Increase of Charges Orders, 1924, made by the Minister of Transport in February, 1924, and continued by the four Railway Companies (Dock Charges) Acts, 1924. The Order for the London Midland and Scottish Railway Docks and Harbours in England being dated 12th February, 1924 (S.R. and O., 1924, No. 221).

"Having regard to the statements and estimates of receipts and expenditure on revenue account as submitted by the four Railway Companies, it would appear that the present applications err on the low side, and the charges now asked for are not likely to place the Dock and Harbour Undertakings of the Railway Companies on an economic working basis. For instance, the estimates show that the Humber Docks of the London and North Eastern Company are still to be carried on with a debit balance of £186,000 per annum, without providing any return on the capital of approximately £14½ million expended on these undertakings.

"The following table, giving the total figures in respect of Railway Docks for 1928, appearing in the accounts recently furnished to the Railway Rates Tribunal in connection with the First Review of Standard and Exceptional Charges under the Railways Act, 1921, confirms the above remarks:—

COMPANY	Capital Expenditure 31st Dec., 1927, as shown by the Company's Balance Sheet.	Balance of Receipts and Expenditure as shown by Account No. 14 for the year 1928.	Percentage of Balance of Receipts and Expenditure upon Capital Expenditure.
S.R. ...	£7,035,095	Surplus £305,886	= + 4.3
L.M. & S.R. ...	10,064,134	Deficiency 127,141	= - 1.2
L. & N.E.R. ...	24,521,465	Do. 73,860	= - .3
G.W.R. ...	20,331,988	Surplus 387,448	= + 1.8
	£55,417,487	Surplus £186,447	

"No debit for interest on capital expenditure is included in the expenditure taken into account above.

"For the four Railway Companies, accepting their figures and apportionments for present purposes only, the deficiencies in net revenue from Dock Undertakings in 1928 were approximately £1½ million on the basis of the 1913 net revenue, together with the additional allowances for capital expenditure included in the standard

revenue, while on the basis of the average return on Railway Capital, again for present purposes accepting the Companies' figures, the deficiencies were as much as £2 million.

"When passing the Railways Act of 1921 it was the intention of Parliament that the Railway Companies' Ancillary and Subsidiary Undertakings should be self-supporting, and with this object Sections 58 (4) and 59 (6) were inserted in the Bill. In supporting the insertion of these provisions the then Minister, Sir E. Geddes, explained to Standing Committee 'B,' to which the Bill was referred, the views of the Government on this matter, and these will be found in the Official Report, 'Railway Bill'—Standing Committee 'B,' dated 11th July, 1921, Cols. 1043 and 1052.

"The Association supports the applications so far as they go as an attempt on the part of the Railway Companies to make their charges more nearly commensurate with their expenses. The Association, however, do not consider that with the charges proposed the receipts will exceed or even equal the expenditure. During the next year or so the proposed charges when in operation will disclose to what extent they are sufficient or insufficient, and in the light of this experience, the Companies should frame their revised Schedules of Charges, allowing some margin of safety before the powers of the Temporary Acts of 1920 and 1922 expire.

"The Association having written on this subject at length so recently as 29th April in connection with the First Annual Review of Standard and Exceptional Charges, I shall be obliged if you will treat that letter as a part of the present one.

"I am sending a copy of this letter to the Secretary of the Railway Companies' Rates and Charges Committee on behalf of the four Railway Companies."

I am, Sir,  
Yours obediently  
(Sgd.) W. C. THORNE.

The Permanent Secretary,  
Ministry of Transport,  
Whitehall, S.W.1.

## Railway Act, 1921: First Review of "Standard Charges" and "Exceptional Charges."

**Sections 58 and 59.**—Circulars 167 and 176 (interim reports, May 17th and September 4th, 1929) gave the members information with regard to the first review and the Association's attitude. The inquiry occupied the Railway Rates Tribunal on four days in May, 1929. The Tribunal in a written judgment dated June 4th (R.R.T., year 1929, No. 16), after setting out (pars. (1) and (2), p. 223) the amounts to be allowed to each of the four amalgamated railway Companies for "additional capital" and the amounts by which the net revenue in respect of the four Companies respectively was less than their respective standard revenues, the total deficiency for the four Companies being £9,157,732, found as follows:—

- (3) That the above deficiencies were not due to lack of efficiency or economy in the management;
- (4) That deficiencies not necessarily as large but substantial in character are likely to continue;
- (5) That, nothing appearing upon our review which established that under present conditions any modification or modifications would enable the Companies to earn their respective standard revenues, no such modifications are necessary, and we make none.

No alteration, therefore, was made in standard charges or in Exceptional charges.

In their judgment the Tribunal referred to the intervention of two dock authorities as follows (R.R.T., 1929, June 4th, No. 16, p. 225):—

"Counsel appeared before us on behalf of the Manchester Ship Canal Company and the Corporation of Bristol, and claimed to be heard on their behalf on all matters included in the proviso to Sub-section (6) of Section 59 of the Act in the event of the Tribunal modifying any charges under Sub-section (4). They also provisionally cross-examined on the respective Accounts No. 14 (Receipts and Expenditure in respect of Docks, Harbours and Wharves), and Accounts No. 16 (Receipts and Expenditure in respect of Collection and Delivery of Parcels and Goods). As we are not modifying any charges under Sub-section (4) it has not been necessary for us to hear them further."

## Agreement with Association dated 12th October, 1927. Railway Dock Plans and Dock Accounts.

The few questions outstanding in connection with the plans supplied to the Association under the agreement of October, 12th, 1927, have been satisfactorily settled.

With regard to the accounts, those for the year 1928 have been furnished by the railway Companies in the form settled with the Ministry of Transport for the docks and groups of docks referred to in the agreement.

## International Labour Conference, Geneva, 1929.

**Draft Convention for Protection against Accidents of Workers Employed in Loading and Unloading Ships.**—This matter was first considered at Geneva in 1928, when Mr. C. M. Jenkin Jones (L.N.E. Railway), as an adviser to the British delegation, represented this Association as well as the railway Companies owning docks (Report for 1928, pp. 28-31).

The question of protection against accidents of workers engaged in loading and unloading ships appeared as a separate item on the agenda for the 1929 Conference, and a Blue Report was issued by the International Labour Office containing the replies of the Governments to the questionnaire settled at the 1928 Conference, and also a draft Convention based on these replies in the form of docks regulations.



**Dock and Harbour Authorities' Association—continued.**

Mr. Jenkin Jones, who again represented the Association and other dock and kindred interests at Geneva as employers' adviser to the British delegation, was appointed Chairman of the Employers' Committee at the Conference, and he with Mr. Cuthbert Laws, the shipowners' adviser to the delegation, did all in their power to shape the Draft Convention to conform as nearly as possible with the British Docks Regulations, 1925 (Circular 176).

Mr. Jenkin Jones's report, dated July 3rd, 1929, which has been circulated, showing the difficulties which had to be surmounted to attain this object, contains in Appendix (B) the British regulations and the Convention as settled in juxtaposition and in Appendix (D) gives the practical effect of the Convention as compared with the British regulations. It will have been noticed that there are some differences between the proposed Convention and the British regulations, but the thanks of the Association are due to Mr. Jenkin Jones for the great efforts he made to secure uniformity and also to Mr. Cuthbert Laws for his able support.

The question whether the British Government will ratify the Convention has not yet been considered, and it will first be necessary for the Home Office to report on the differences between the British regulations and the Convention, in view of the assurance which was given before both the 1928 and 1929 International Conferences that the Government were not prepared to go beyond the British regulations.

The Association, in conjunction with the ship owners and other interests with whom they have worked throughout, are in touch with the Home Office with a view to preserving the present regulations.

**Washington Convention—Eight-hour Day.**

It will be remembered that the policy of the late Government was to secure revision of the above Convention to make an effective international regulation of hours of work possible, having regard to existing circumstances, and particularly in regard to shift and overtime working.

The present Government, however, on taking office, announced its intention ("Times," June 13th, 1929) to take the necessary steps to ensure ratification at the earliest possible moment.

The employers' attitude as expressed at Geneva on June 13th by Mr. Forbes Watson, Director of the National Confederation of Employers' Organisations ("Times," June 14th, 1929), is that the Convention is unfitted to meet British industrial practice and would be directly prejudicial to British industry.

The Minister of Labour, Miss Bondfield, received a deputation from the National Confederation on July 30th, on which the Association was represented, when it was pointed out how impossible it was for docks and railways to carry on without overtime working.

Subsequently, in December, Miss Bondfield invited the railway Companies and the railway Unions to a discussion for the purpose of seeing how the Convention could be ratified with the inclusion of the railway industry.

The question of ratification was discussed in "The Times" on December 3rd, 5th, and 6th, 1929, and the following extract is taken from the leading article of December 6th:—

"When the representatives of the railway interests were with the Minister of Labour the other day they were jointly concerned with the disarrangements that an elastic eight-hour day and forty-eight-hour week would cause in a highly organised system of transport. There is a universal admission that the Convention can only be made tolerable in railway work by wide departures from its strict requirements. The objections which the Minister heard from the railway unions, as well as from the railway managers, were not captious, not imaginary, not the perverse complaints of unprogressive opponents. They were sincere and real. The objections which can be brought forward by other industries are likewise not trumped up or merely obstructive. If they are, or to the extent that they are, let them be heard and exposed. There is an honest and straightforward British view of the Convention which ought to find expression in British legislation and in the British attitude to the Convention in the International Labour Conference."

The remarks apply equally to dock and ship working.

**British Engineering Standards Association.**

The following draft specifications, prepared by committees of the Standards Association, were circulated to the members during the year for their comments:—

1. C.B. (SH) 7,510—Draft Specification for Ship's Cargo Lifting Blocks (Circular 165);
2. C.B. (ME) 7,532—Draft Specification for Travelling Jib Cranes (Circular 166);
3. C.B. (ME) 8,539—Draft Specification for Derrick Cranes (Circular 175).

This Association is represented on Committee 1 above by Captain L. M. Davies, of Liverpool, and on Committees 2 and 3 by Mr. W. G. Smith, of Manchester.

The following completed specification in which members are interested has been published:—

Round Strand Galvanised Steel Wire Ropes for Shipping Purposes (Circular 170).

**Water Transport Premiums.**

**Premium for 1929.**—The subject for the 1929 paper (Circular 154, December 11th, 1928) was—

"A description of the varying policies in force with different port authorities in regard to the provision of labour for handling cargo, e.g.:—

- (a) Where the authority has the monopoly of the labour supply.
- (b) When it is prepared to supply the labour in competition with private enterprise.
- (c) Where it remains entirely aloof from the labourage operations.

"Authors are required also to give their views on the several practices."

The adjudicators appointed by the Institute of Transport awarded the prize, a gold medal, to Mr. J. F. R. Wiggins, a member of the staff of the Mersey Docks and Harbour Board. A précis of Mr. Wiggins's paper is published in the "Journal of the Institute of Transport" for January, 1930. (Circular 187.)

**Premium for 1930.**—The subject selected by the adjudicators, Messrs. Ross-Johnson, Watkins, and Owen, appointed by the Institute of Transport, for the present year is—

"Causes of and precautions against congestion at ports, with special reference to the best methods of preventing congestion of traffic at ports."

The subject is an interesting and important one, and the committee hope there will be a large entry; they were disappointed to learn that only three papers were sent in in 1929 (Circular 188).

**National Confederation of Employers' Organisations.**

Your committee has for some time past worked in close co-operation with the National Confederation in a number of matters where the general interests of employers are concerned. Every year the need for joint action becomes more necessary, and as examples the Factories Bill, International Conferences at Geneva, and the Washington Convention are referred to.

This year the Association have joined the Confederation at a subscription of £100 per annum; for several years past they have given a donation of £52 10s. The Hon. Secretary will continue to serve on Standing Committees dealing with the above-mentioned subjects, and the Association will be represented on others as occasion requires.

**Royal Commission on Transport.**

The Royal Commission (Chairman, the Right Hon. Sir Arthur Griffith-Boscawen) invited the Association to give evidence before them.

A sub-committee was appointed to prepare the memorandum of evidence, which was considered by the Executive Committee. At the request of the committee, the memorandum was finally settled by Mr. D. J. Owen (Port of London Authority), Mr. M. Kissane (Manchester Ship Canal Company), and the Hon. Secretary, and then submitted to the Royal Commission. The two former gave oral evidence before the Commission on October 31st.

The evidence laid stress on, *inter alia*, the following matters:

- 1.—That the charging powers of dock authorities, who are for the most part managed by public trusts not working for profit, should be free from departmental control.
- 2.—That, generally speaking, in the absence of an improvement in the volume of trade, no further general reductions are possible in port dues in view of the increase of expenditure to meet interest on capital, the reduction in working hours and restrictions on overtime, and the falling off of exports and re-exports.
- 3.—That it is impossible for any of the available means of transport conducted by private enterprise to maintain its efficiency in competition with other forms of transport supported or assisted out of public funds.

Mr. Owen, in his oral evidence, also contrasted the trade at the larger Continental ports, such as Antwerp, Hamburg, and Rotterdam, with British ports, and showed the reason for the higher charges at the latter ports. He pointed out that physical conditions, such as range of tide, etc., financial considerations (e.g., the cost of policing, scavenging, provision of roads, etc., which are borne by the State or municipality abroad), and labour costs all favour the Continental ports.

Finally, Mr. Owen emphasised the delay and congestion caused through the difficulty of road access to a number of the docks in this country. (Minutes of Evidence, Part XIII., 33rd day, pp. 772-786.)

Sir Norman Hill gave evidence for the Shipowners' Parliamentary Committee on November 14th. Speaking of the ports, Sir Norman stated that while British shipping did not seek State assistance for itself, the industry considered that both the big and small ports of the country were in a somewhat different position from the other transport services. The shipping industry, he said, were of opinion that the assistance of the State might be given to the ports for the purpose of carrying out wise and provident improvements. He declared that the adequacy of the ports and of the facilities they provided for the handling of ships and their cargoes, and the cost at which

# Dock and Harbour Authorities' Association—continued.

such services were provided, were matters that concerned every man, woman, and child in this country, and were as important to the inland transport agencies engaged in the handling of our overseas trade as to shipping itself. (Minutes of Evidence, Part XIV., 35th day, pp. 796-822.)

## Buoyage and Lighting of Coasts.

In February the Advisory and Technical Committee for Communications and Transit of the League of Nations, having again (Report for 1926, p. 24) considered the question of a general unification of maritime signals, issued a further report, dated February 20th, 1929. This report was forwarded by the Board of Trade to the Association for their observations. The Association's sub-committee to whom the report was referred, being assisted in their deliberations by the nautical advisers of other bodies, came to the conclusion that, though the proposals contained several modifications from previous proposals, no good case had been made out to justify a departure from the present system of buoyage and lighting, which has been in force in this country since 1883. The Association wrote to the Board of Trade to this effect, and further pointed out that even if the report were to be adopted uniformity would not be thereby gained, as no less than four schemes of lighting were suggested by the Advisory and Technical Committee.

## International Conference: Safety of Life at Sea.

This Conference met in London in April and was attended by representatives from 18 countries. The Conference signed a Convention which included a revised code of regulations for preventing collisions at sea.

The sub-committee to whom the matter was referred made recommendations on some of these regulations, which were embodied in a letter to the Board of Trade.

## Artificial Lighting of Docks: Factory Report on Docks for 1928.

The Research Department of the Department of Scientific and Industrial Research, who had been requested by the Home Office to investigate the lighting of docks, asked the Association to nominate a representative to assist their Illumination Sub-Committee, to whom the subject had been referred. Later the Home Office also joined in this invitation.

An assurance having been received that the reference to the Illumination Sub-Committee was that they should present a report for scientific guidance as to the suitability of methods of lighting docks in general and was not to be a detailed inquiry into the state of lighting at any particular dock or docks, the Executive Committee appointed Mr. Alaric Hope (late Engineer to the Cardiff Docks and formerly an assistant to the Engineer to the Mersey Docks and Harbour Board) as the Association's assessor to assist the sub-committee. The Transport and General Workers' Union have appointed Mr. Milford to represent them in a similar capacity.

In this connection the following extract is quoted from the annual report of the Chief Inspector of Factories (July, 1929, Cmd. 3360) for the year 1928, relating to lighting in particular and accidents at docks in general:—

"Docks (page 40). With a view to showing exactly what operations were responsible and to what extent, for accident causation, the whole of the reported casualties occurring in the processes of loading, unloading or handling goods have been classified and are embodied in a table.

"It will be noted that although 6,943 accidents, including 100 fatalities, were reported, only 33 of the total, including four of the deaths, were attributed by the inspector to breach of Regulations. It is significant also that no fewer than 2,497 accidents were due to the handling or moving of goods, but in no way resulted from the use of machinery or power.

"All the Inspectors reporting on this subject (Docks) comment on the general advancement in the observance of the Regulations, and the relatively small number of casualties resulting from breaches of the Code, supports the view that the requirements are, on the whole, now satisfactorily complied with. Very few irregularities are now observed in connection with the shore plant or permanent structures about the Docks. Such breaches of the Regulations as are detected are usually found on the vessels, and particularly on the smaller foreign ships which only occasionally visit British ports."

In the table, lighting is sub-divided into four heads, viz.:—(a) "Shore approaches," (b) "means of access," (c) "in hold or on deck," (d) "other"; and in each case no accidents are reported.

## Pollution of Streams and Rivers.

The Association were invited by the Royal Sanitary Institute to send representatives to a Conference in May last to consider this question.

Major E. G. Finch, Solicitors to the Mersey Docks and Harbour Board, and Commander E. C. Shankland, River Superintendent of the Port of London Authority, represented the Association and took part in the discussion in the morning session on the subject of amending the River Pollution Prevention Act, 1876.

These gentlemen pointed out that not only sanitary interests should be taken into account, but that in any amendment of

the law the interests of navigation and conservancy must be considered, and that on the question of a central authority the Admiralty and the Board of Trade should be consulted and represented as well as the Ministry of Health. They further referred to the precipitation of solid sewage matter and its effect upon the cost of dredging.

The proceedings at the Conference are reported in the June issue of the "Journal of the Royal Sanitary Institute."

## XVth International Congress of Navigation.

A letter was received from the Ministry of Transport calling attention to this International Congress, which is to take place in Genoa and Venice in 1931, and inviting Engineers or officials from dock authorities to attend the Congress and read papers.

The letter, dated October 18th, 1929, and the agenda for the Congress were forwarded to the members, but so far only one authority has intimated that their Engineer would attend and read papers on two of the subjects on the agenda. Members desiring to take part or for their officers to take part in the Congress will no doubt communicate with the Ministry of Transport in good time (Circular 178).

## International, Colonial and Maritime Exhibition, Antwerp, May, 1930.

The Hon. Secretary, as representing ports and harbours, has, on the invitation of the Department of Overseas Trade, joined the Committee appointed by the Government in connection with the British Section of the Exhibition. The Prince of Wales is patron, and Mr. G. M. Gillett, M.P., the Parliamentary Secretary of the Department of Overseas Trade, is chairman of the British Committee.

Members on December 17th were sent information respecting the Exhibition, with forms of application for space (Circular 186).

## Charges at Ports for Aircraft.

It is useful to record that by the Clyde Navigation Act, 1929, the Trustees are empowered to levy reasonable rates from the owners of, *inter alia*, seaplanes, hydroplanes, airships, and similar craft. (1928 Report, p. 31.)

## Committee on Industry and Trade.

This Committee, under the chairmanship of Sir Arthur Balfour, issued their final report dated March, 1929 (Cmd. 3282). Under the heading "Ancillary Businesses of Railway Companies" (p. 74) they state that—

"in times past there has been widespread feeling that the railways deliberately stifled traffic on the canals of which they obtained the control. It was further believed by shipowners that the railways set themselves to destroy the competition of coastwise shipping by a rate war. Lastly, it has been urged that Railway Companies which control ports have used their strong financial power to attract traffic from ports not under their control by means of uneconomic charges at their own ports, so as to feed their own transport system. We are in no way pronouncing on the validity of these complaints. We are aware that Railway Companies were frequently compelled to take over canals against their will, that the grievance with regard to coastwise traffic has been more or less met by the provisions of the Railways Act of 1921, and that the Railway Companies are under an obligation to keep separate accounts of their port enterprises, and are subject to statutory provisions designed to prevent users of the railways from being mulcted to make up any unduly low net revenue arising from such branches of work."

The Committee in a later passage (pp. 74-75) make the following suggestion:—

"It is, indeed, our desire to see the railways as free as possible to undertake business ancillary to their principal objects, because we believe that in this way only can the best services be rendered to the trader and to the public at the least cost. But we are disposed to think that in view of the historical position and of the quasi-monopolistic power enjoyed by the railways in respect of their main business, it might be prudent to enact some general provision giving jurisdiction to the Railway and Canal Commission to deal with complaints by outside interests affected of 'unfairly oppressive' action on the part of Railway Companies in the conduct of an ancillary business of any kind."

## Standing Committee on Mineral Transport.

This Committee, appointed in 1927 by the President of the Board of Trade and the Minister of Transport (Sir Arthur Duckham, Chairman), issued their first report dated October 21st, 1929 (Cmd. 3420). Mr. L. A. P. Warner, General Manager of the Mersey Docks and Harbour Board, is a member of the Committee.

The report comments on the facilities for dealing with coal at ports and shipping places (pp. 8-11), and the recommendations are set out on pp. 38-50.

## Merchant Shipping (Liability of Shipowners and others) Act, 1900.

**Limitation of Dock Owners' Liability—The "Ruapehu" (No. 2).**—Mr. Justice Hill's judgment in this case is worth noting. He decided that the ship, the tonnage of which is to be taken for the purpose of calculating the amount of the



Dock and Harbour Authorities' Association—continued.

limit of liability, is the largest ship which has during the statutory period of five years been within the "area" over which the limiting dock owner performs a duty or exercises a power, which area contains within it the particular dock in which the damage has occurred. In other words, that the tonnage of larger vessels which may have entered other areas belonging to the dock owner or over which he performs a duty or exercises a power are not to be considered. The case, which is reported in "L.R. (Probate Division), 1929, p. 305," does not contain a definition of the word "area" except in so far as the Judge was clear that docks at Falmouth are not within one area with docks at Blackwall.

Miscellaneous.

Among other matters which have received attention during the year are:—

- Marking of Wrecks.
- Arrangement with Government, December, 1920—
- (a) High Commissioner for South Africa—Certificate for Rebate.
- (b) Dues on Ships.
- Helm Orders.
- Policing at Docks—Exchequer Grant.
- International Sanitary Convention—Duties of Pilots.
- Tonnage Measurement—S.S. "Inverleith" and "Inverurie."
- Petroleum Consolidation Act, 1928—Petroleum (Carbide of Calcium) Order, 1929—Draft Regulations as to keeping and use of Petroleum Spirit for the purpose of motor vehicles, etc.
- National Savings' Committee—Schemes for long Service and Pension Funds.
- International Chambers of Commerce—British National Committee.
- Merchant Shipping (Line Throwing Appliances) Act, 1928—Order.
- Hours of Work of Salaried Employees—Proposed International Convention.
- Telegraphic Facilities—Dundee.
- Constitution of Dock and Harbour Authorities—Italian Embassy.
- Speed Boats—Berwick Harbour. Shoreham Harbour.
- Crown Proceedings Bill—Liability in respect of Crown Ships.
- Berthing of vessels carrying oil—Newport.

Principal Circulars issued in 1929.

- Expiring Laws Continuance Act, 1928 (No. 160).
- Interim Reports, May and September (Nos. 167 and 176).
- Rating and Valuation (Apportionment) Act, 1928 (No. 171) (No. 176).
- Development (Loan Guarantees and Grants) Act, 1929 (Nos. 173, 176, 177, 182 and 183).
- Coast Protection Bill (No. 174).
- Tolls Bill (No. 181).
- International Colonial and Maritime Exhibition, Antwerp, 1930 (No. 186).
- Water Transport Premium (Nos. 187 and 188).

Lease of Offices.

The lease of the Association's offices is being renewed at a rental of £300 per annum inclusive of rates and taxes for a period of 21 years, with several options to terminate.

Accounts.

The expenditure for the year, including the balance of the special expenditure incurred in proceedings before the Railway Rates Tribunal and on appeal to the Court of Appeal, amounts to £2,715 6s. 1d., of which £2,694 10s. 8d. is payable by members of the Association.

The special expenditure amounted to ... ..	£2,978 6 5
Part of this has already been charged to previous years' accounts, viz:—	
1926 ... ..	£1,000 0 0
1927 ... ..	750 0 0
1928 ... ..	250 0 0
	2,000 0 0
Leaving a balance of ... ..	£978 6 5

£875, the half of the sum of £1,750 advanced towards the special expenses (Report for 1928, p. 35) by the five authorities viz., the Port of London Authority, the Mersey Docks and Harbour Board, the Clyde Navigation Trust, the Manchester Ship Canal Company, and the Port of Bristol Authority, is still unpaid. These Authorities have now kindly agreed to forgo half of the outstanding debt (viz., £437 10s.). This sum has therefore been deducted from the balance of the special railway expenses in this year's accounts.

After this deduction the accounts show a deficiency for the year of ... ..	£551 0 8
To this must be added the deficiencies brought forward from previous years—	
1927 ... ..	£44 16 1
1928 ... ..	27 3 0
	71 19 1
	£622 19 9

The committee recommend that a levy amounting to 30 per cent. on the 1929 subscriptions be made for 1929 with a view to meeting this deficiency.

**Subscriptions.**—Harbour, Conservancy, Pilotage, and Light-house Authorities.—The committee fixed the subscriptions of these authorities under Rule 12 (4) for 1930 on a gross income basis.

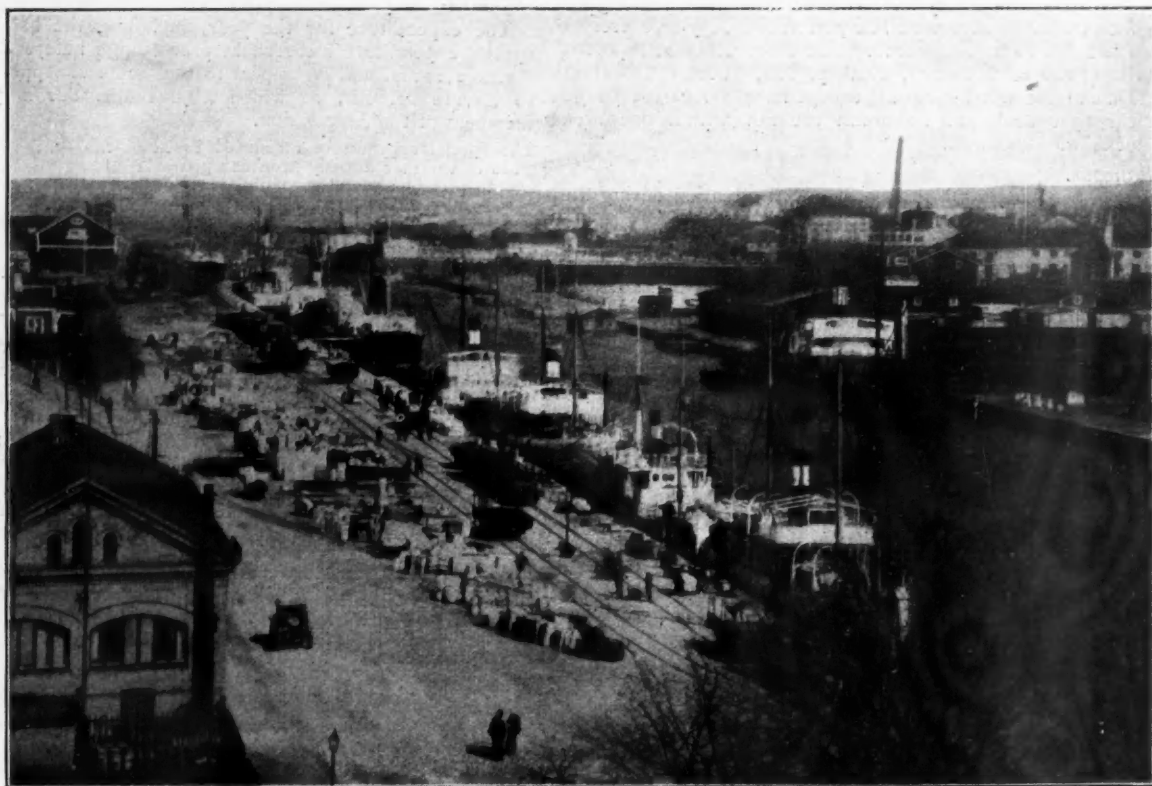
£2,000,000 Dock Works Scheme.

NEW MERSEY dock works estimated to cost £2,000,000 have been approved for grants from the Government. Following the absorption of Clarence Dock by Liverpool Corporation for the super-power station, the Mersey Docks and Harbour Board proposes to so alter and add to the Clarence half-tide dock and graving dock basin by constructing new quay walls, new bridges, passages, etc., as will modernise the whole of Liverpool's central dock system and provide adequate communication with the north dock system. Trafalgar Lock will be removed entirely, and the passages leading to the West Waterloo and Salisbury Docks will be enlarged and deepened, thus giving a uniform through lead from the Prince's Dock right up to the Sandon Dock system, and thence, if required, to the great Gladstone Dock deep water entrance. With this great work completed, the coasting lines will for all time have ample accommodation and a clean run through for docking and undocking at any time, irrespective of tide-time, a boon long asked, but only now deemed practicable. On the other side of the river it is intended to fill in Wallasey Pool and to construct a great new dock alongside, with a water expanse of over half-a-million square feet. The long looked-for development of the Bidston Moss Estate, seems, therefore, to be imminent. The first stage of the work, that of creating a new East Float alongside the present derelict expanse of water, will, if proceeded with, find work for anything up to 200 men for a period of about two years, and when the task is completed, Birkenhead will be provided with a magnificent new deep water dock and approximately three-quarters-of-a-mile of extra quay-side. Immediate road access to the site is already available on the Birkenhead side, along Beaufort Road and Wallasey Bridge Road, but it will be interesting to see what provision the Wallasey Corporation will make in view of the fact that the old Pool is at present shut in on the Wallasey side by the railway embankment. Three great groups, the L.M.S., G.W.R. and L.N.E.R., have direct access to the new water area. It might be asked: Why is not the old Pool utilised as the site for the new dock? The Seacombe to Bidston railway line runs so close to the verge of the Pool that were the new dock to be

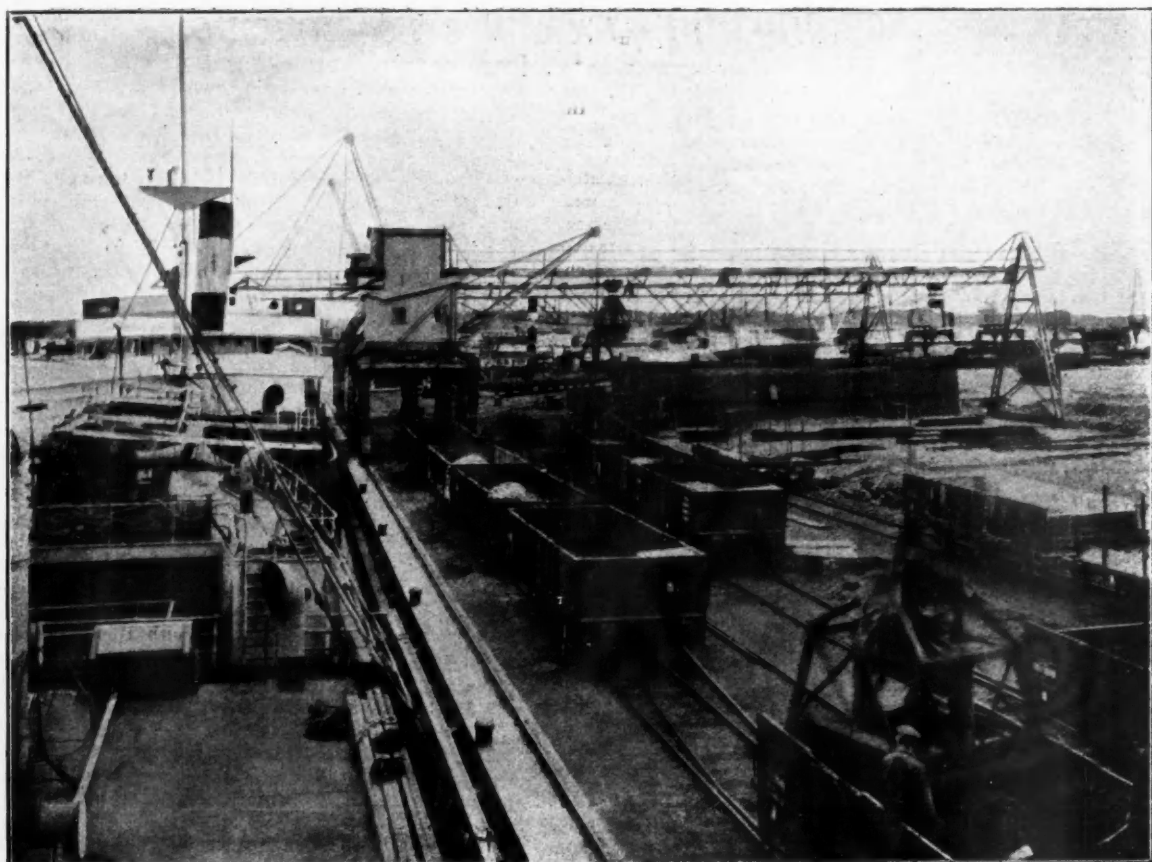
constructed on the existing water area, no space would be left for factory development on that side. The placing of the dock in a more central position will allow of the freest development in every direction. The engineers have planned for the filling in of the old Pool with the spoil excavated from the site of the new dock and when the work is completed, the new East Float will have a uniform depth of 9-ft. below Old Dock Sill—the same depth as the West Float—and its length will be about 1,600-ft. and its maximum width 150-ft. Also before the Government, are the Board's proposals to provide new and up-to-date bridges capable of dealing with the modern class and weight of traffic. The new dock to be made alongside the Wallasey Pool will take three-and-a-half to four years to complete; improving the central Liverpool docks, removing the Trafalgar lock and enlarging the West Waterloo and Salisbury Docks passages will take about the same time; four new bridges for the Birkenhead Dock Estate and one for Liverpool, three years to complete. Big engineering works all over the country will be invited to tender for the bridge construction work, and the steel work required will run into thousands of tons. There will be work for the iron and steel trades which will be called upon to supply the various new "steam navvies" cranes and railway materials required. In modern dock construction a great quantity of ferro-concrete is used and, in consequence many thousands of tons of cement and reinforcement will be called for. It is impossible to state when the work will begin, but already the engineering staff of the Dock Board is making preparations.

Mr. H. F. Fernie, chairman of the Works Committee of the Mersey Docks and Harbour Board, reported to the meeting held on 13th February, that the approval of the Government to the three schemes (under the Unemployment Grants project) was subject to certain arrangements which had to be considered by the committees. The Dock Board or its contractor will be at liberty to employ for controlling and supervisory purposes, a number of permanent employees not exceeding 10 per cent. of the total number of men engaged on the work. Another important condition is that all materials required, so far as possible, must be of British manufacture.

## *The Port of Gefle, Sweden.*



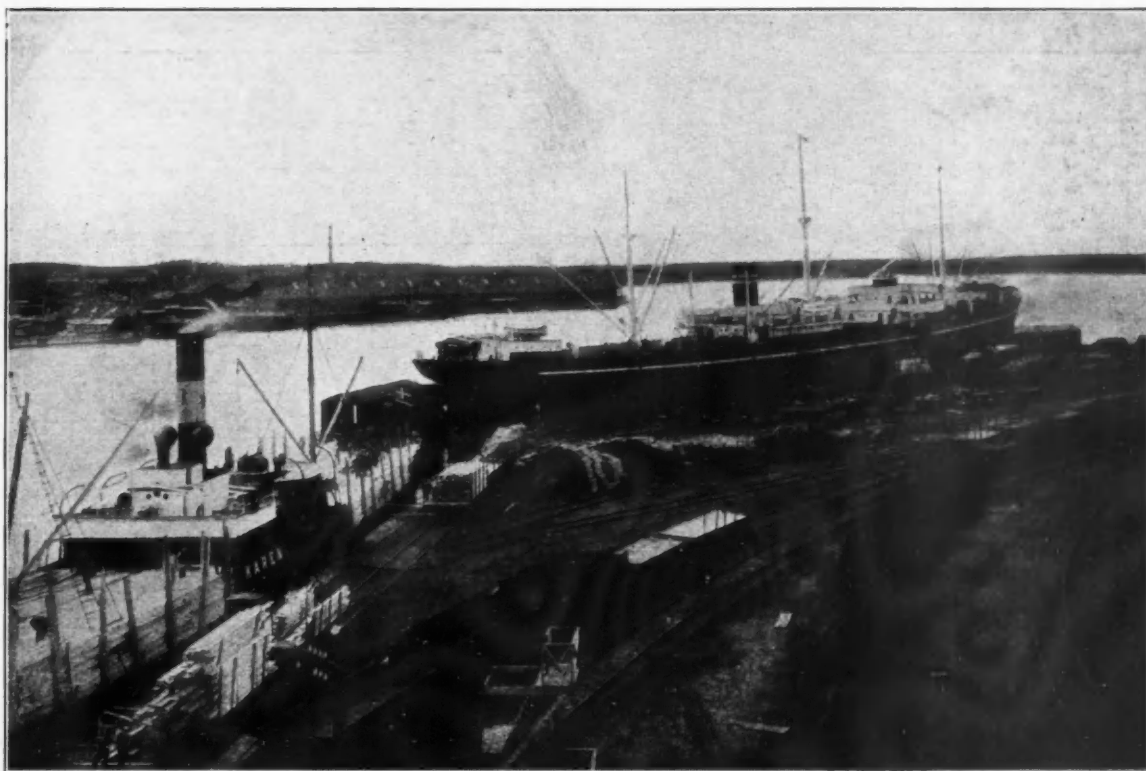
*The Gavle River, East of the Custom House.*



*Ore-loading in Fredriksskans Harbour*



## The Port of Gefle, Sweden.



South-Eastern Quay. Fredriksskans Harbour.

### General History.

THE rise of Gefle as a trading centre is no doubt to be attributed to the natural advantages which its situation, at the mouth of the Gavle River, offered the fisherfolk on the coast for practising their craft. Exactly when this trade and fishing centre was first dignified by the name of "town" cannot now be ascertained, for all data bearing on this event were destroyed during the fire that laid the town waste in 1569. From what few data there are at hand, however, one may draw the conclusion that Gefle became a town during the latter part of the fourteenth or the beginning of the fifteenth century. This makes it safe to assume that the town is at least 500 years old.

In spite of repeated fires, three of which were completely devastating, and in spite of the difficulties in competing with those ports to the south which during the seventeenth and the greater part of the eighteenth century safeguarded their own interests through the so-called "Baltic Trade Monopoly," Gefle has been able to hold her own and develop into the largest Swedish city north of Stockholm.

The temporary setback suffered during the world war proved of short duration, and the town is now well prepared to develop further the many industrial, commercial, and seafaring possibilities that have their natural centre there.

### Position.

Gefle is situated at the head of the Gefle Bay, which marks the southern limit of the Gulf of Bothnia. Two separate and comparatively short channels lead directly from the sea to the harbour, which is naturally protected by a chain of islets and skerries. The first of these channels, with a N.E.-S.W. direction and a length of 1.3 kilometres, is navigable by ships drawing 6.7 metres, whereas the other channel, with a length of 1.8 kilometres, is principally used for coastwise traffic and by sailing craft.

### Ice Conditions.

The ice obstruction that formerly made it impossible to keep the harbour open the year round has now in the main been overcome. The harbour owns an ice-breaker of 240 tons gross and 660-h.p. This ice-breaker as a rule suffices to keep the harbour open even during severe winters. And since the putting into service of the large modern, State-owned ice-breaker of 6,000-h.p., which when occasion demands is placed at the disposal of the harbour, hindrance from ice obstruction has been reduced to a minimum.

### Hinterland.

With its population of 40,000, Gefle is not only the largest town north of Stockholm, but also the most important centre of commerce and industry in this area. Gefle harbour serves one of the most highly developed industrial districts of the country. The neighbouring provinces of Gästrikland, Dalecarlia, Uppland, and Hälsingland are the source of some of the most important export articles of Sweden, as will be seen from the following summary data:—During the year 1924 not less than 27 per cent. of the country's total output of pulp and 40 per cent. of the total output of pig iron were produced in this district.

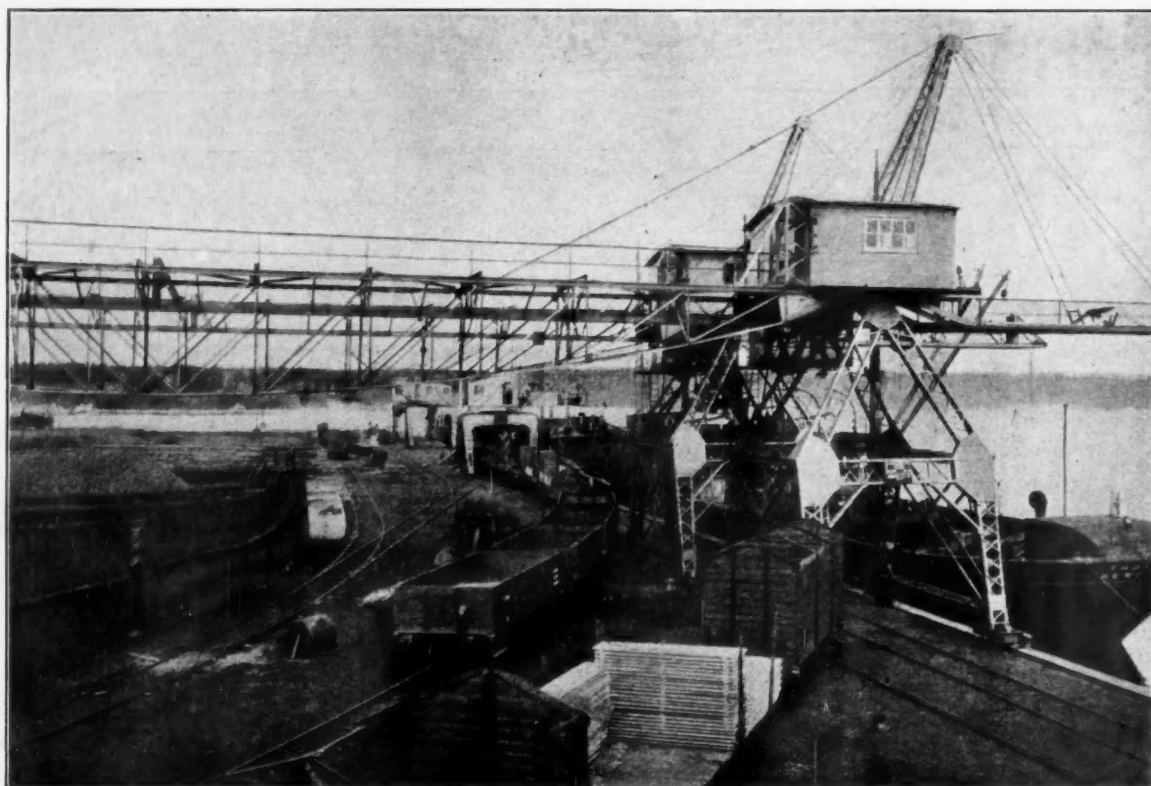
The trade area of the town may be said to comprise the whole of Norrland and the greater part of Svealand. The imports consist principally of coal and other raw products and articles of industrial consumption, such as coke, sulphur, phosphate of soda, metals, oil, etc., grain, colonial produce, especially coffee, fruit, fodder, fertilisers, etc..

### Railway Communications.

The town could not hold her own as a trading centre were it not for a widely ramified system of railways. The railways converging on Gefle make it easy to collect the staple export goods of the district and speedily to distribute the various articles of import to the most remote corners of the hinterland. The Gefle-Dala Railway connects the harbour with the large industrial centres along its line, Forsbacka, Sandviken, Hofors, Falun, and others, and, through the connection of this main line with other lines, reaches most of the large iron mines of Southern Dalecarlia, as well as the saw, pulp, and paper mills of the same province. The Uppsala-Gefle Railway carries the exports of Northern Uppland to the port, and the railway to Ockelbo connects the town with this important industrial centre and with the provinces to the north. Gefle is also the terminus for the East Coast Railway to Härnösand—completed in November, 1927—which gives further connection with the rich industrial districts along the coast of the Gulf of Bothnia. Finally, the Sala-Gysinge-Gefle Railway, running S.S.W., caters for the traffic with Gästrikland and Northern Västmanland.

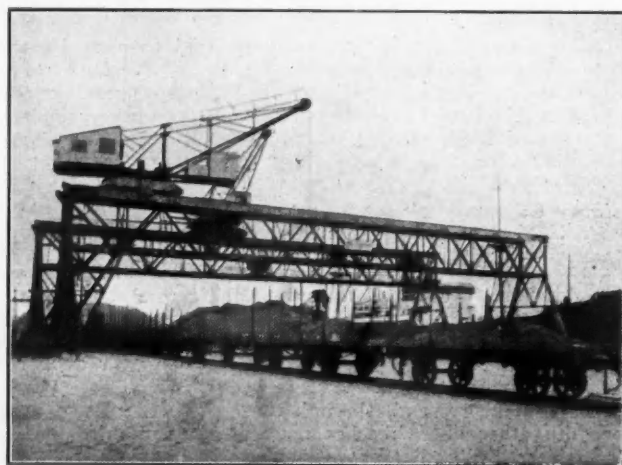
### Sea-borne Trade.

Gefle has regular sea connections with all Swedish coast ports of any importance, as well as with German, Danish, English, Dutch, Belgian, French, Spanish, Mediterranean, and overseas ports.

*The Port of Gefle, Sweden—continued.**Eastern Quay. Fredriksskans Harbour.*

The traffic with Swedish ports is principally maintained by a number of lines of the Stockholm's Steamship Company Svea; further, by Fallenius and Leffler, Ltd., Göteborg, and R. V. Normann & Co., Stockholm. To Danish and German ports, such as Copenhagen, Lübeck, Bremen, and Hamburg, service is maintained by the Svea Company and several German and Danish lines.

In addition to these connections, the Svea Company maintains weekly service to Continental Channel ports and, as inducement offers, a service to ports on the Bay of Biscay. The Steamship Company Svenska Lloyd maintains a fortnightly service to Spanish, French, and Italian Mediterranean ports. The steamers of the Swedish Orient Line call at Gefle for cargo to Eastern Mediterranean ports.

*Ore-loading in Fredriksskans Harbour.*

Communications with Great Britain are also good. Fortnightly services are maintained, by the Svea Company to English and Irish ports, by J. T. Salvesson & Co., of Grangemouth, to Scottish ports. The Stott Line, or occasionally the Coker Line, every third week has a steamer to Liverpool, Manchester, and other ports. The steamers of Adolf Bratt & Co., of Göteborg, call for cargo to Southampton, Bristol, Cardiff, Belfast, and Dublin.

The Swedish American Line and the Swedish America Mexico Line, jointly with the Transatlantic Steamship Co., Ltd., maintain monthly or fortnightly service, as inducement offers, to North American ports, such as New York, Boston, and Baltimore. The Scantic Line and Moore and McCormack, Ltd., do likewise. The Swedish America Mexico Line, jointly with the

Transatlantic Line and the Norwegian Mexican Gulf Line, maintain monthly or fortnightly service to American ports on the Mexican Gulf, Mexico, and Cuba. The Johnson Line provides regular sailings (with transshipment in Stockholm) to and from North American, Pacific, and South American ports. Ships of the Transatlantic Line or the Norwegian Africa and Australia Line, jointly with the Danish East Asiatic Line, generally call once a month for cargo to Australia, South Africa, and Java. The Deutsch-Australische Dampfschiffsgesellschaft also sends boats to Gefle when amount of cargo so warrants. Steamers of the Swedish East Asiatic Co., Ltd., jointly with the Danish Asiatic Company, will call as inducement offers for cargo direct to ports in India, China, and Japan. In most cases, however, cargo to these distant ports must be transhipped at Göteborg, Copenhagen, or Hamburg.

**Trade Statistics.**

According to the statistics of 1925, Gefle is the eighth Swedish harbour in order of importance. For the sake of fairness, however, it should be pointed out that two of these harbours derive their statistical importance from the export of iron ore and that another one has gained its place as a result of steam ferry traffic. Leaving these harbours of a more specific nature out of account, Gefle would be the fifth Swedish harbour in order of importance, coming immediately after Stockholm, Göteborg, Malmö, and Helsingborg. The two last-named harbours, being in the extreme south of Sweden, obviously do not compete in the more northerly trade area served by Gefle.

After a temporary setback during the years immediately following the war, the sea-borne trade of Gefle has steadily increased and has now surpassed the record figures of 1913. The following data will illustrate this:—

Year.	Number of Vessels (trips).	Total Net Tonnage.
1890	4,087	909,873
1900	4,300	1,123,873
1910	3,846	1,436,872
1913	4,038	1,808,213
1921	2,139	695,382
1922	2,809	1,251,466
1923	3,038	1,463,945
1924	3,317	1,551,326
1925	3,372	1,731,832
1926	2,856	1,555,070
1927	3,238	2,060,665
1928	3,281	1,902,743

**Harbour.**

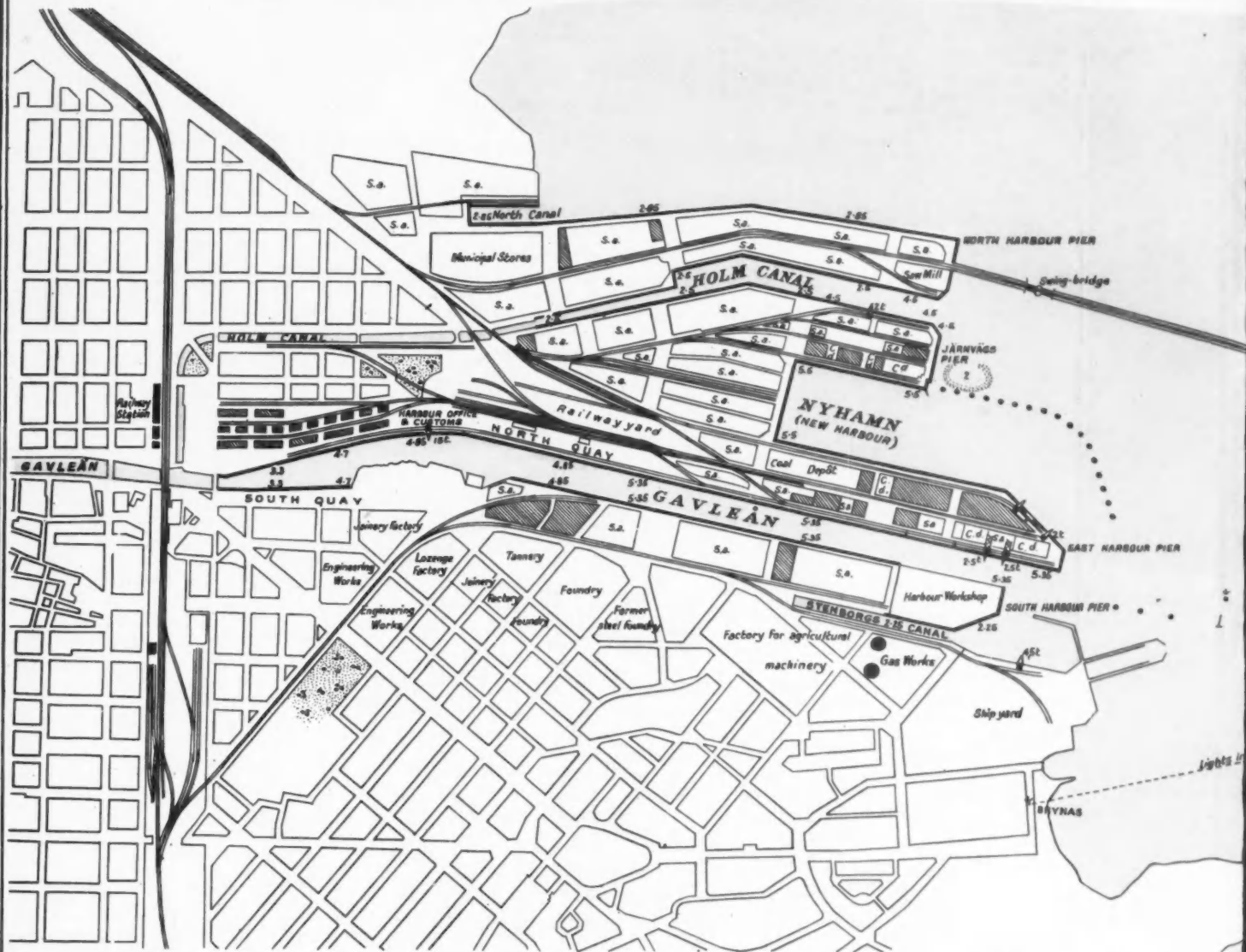
The harbour is divided into two areas, the inner and the outer harbours. The total length of quay accommodation is estimated at 11,550 metres, of which fully half is in regular use.



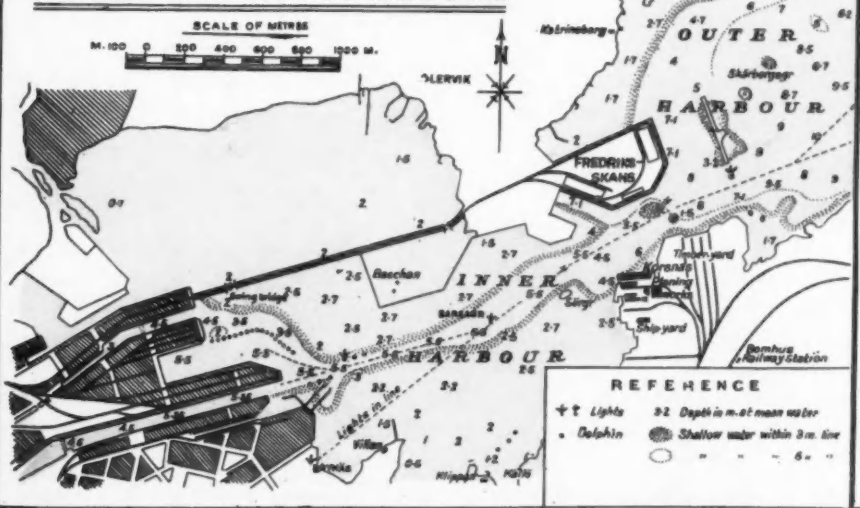
# PORT OF GEFLE.

( S W E D E N )

UNDER THE JURISDICTION OF THE HAMNSTYRELSEN, GEFLE.



## GENERAL MAP OF THE HARBOUR.

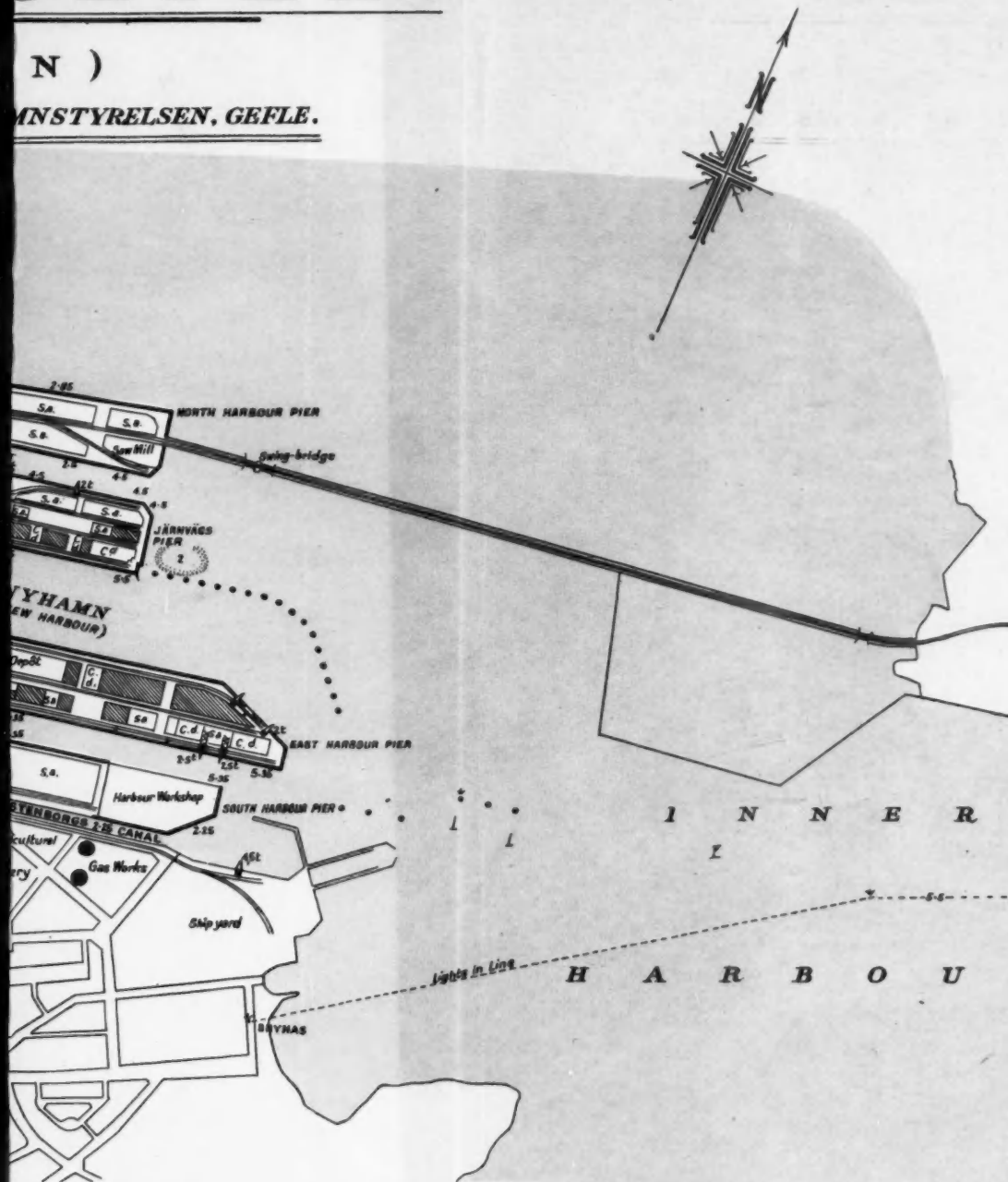


THE DOCK AND HARBOUR AUTHORITY,

# GEFLE.

N )

MINSTYRELSEN, GEFLE.



Scale of Metres.





ITY, MARCH, 1930.

# REFERENCE

Sheds shown Hatched

→ Cranes

C.d Coal Depôt

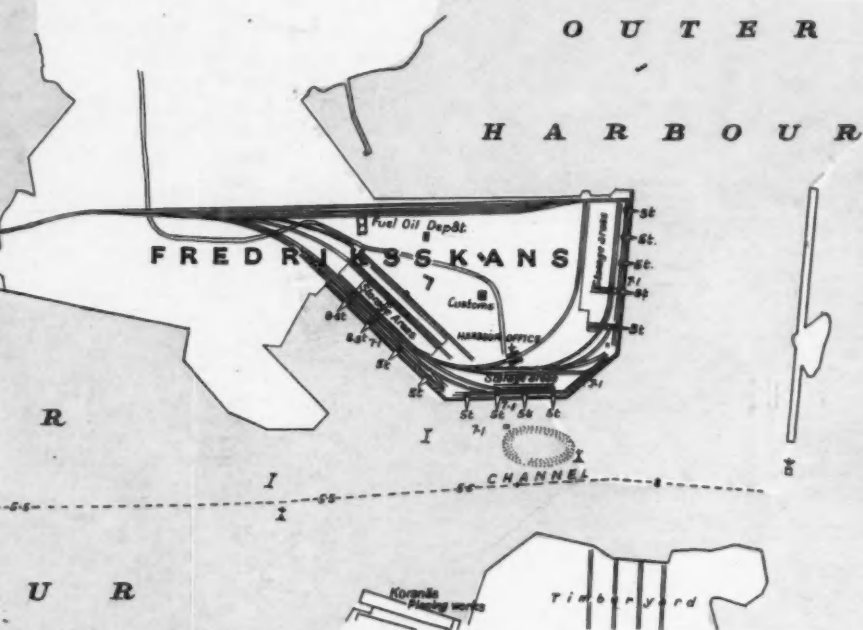
Quays

S.a. Storage Areas

↓ Lights

Dolphin

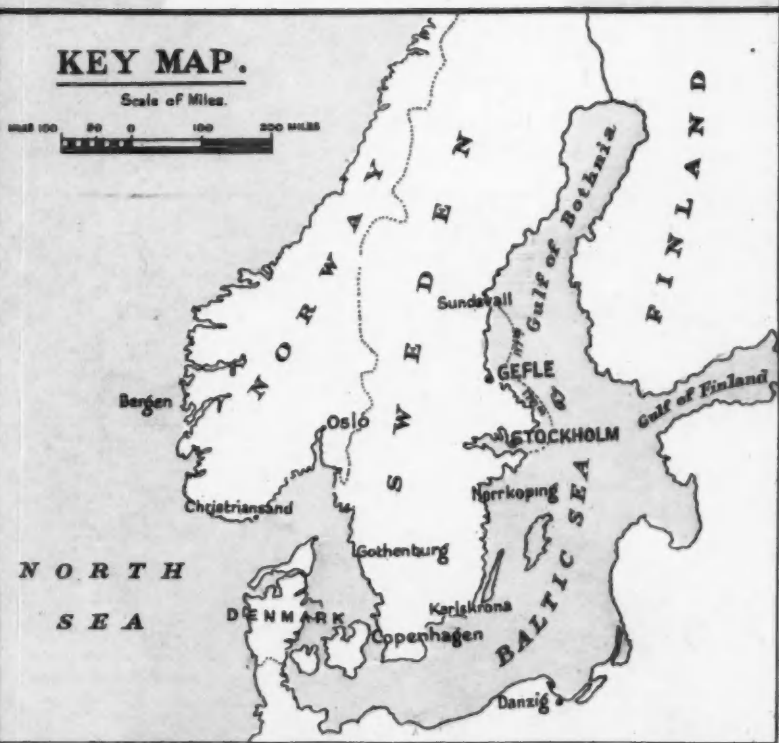
Depths in metres at mean water.



## KEY MAP.

Scale of Miles.

0 50 100 200 MILES

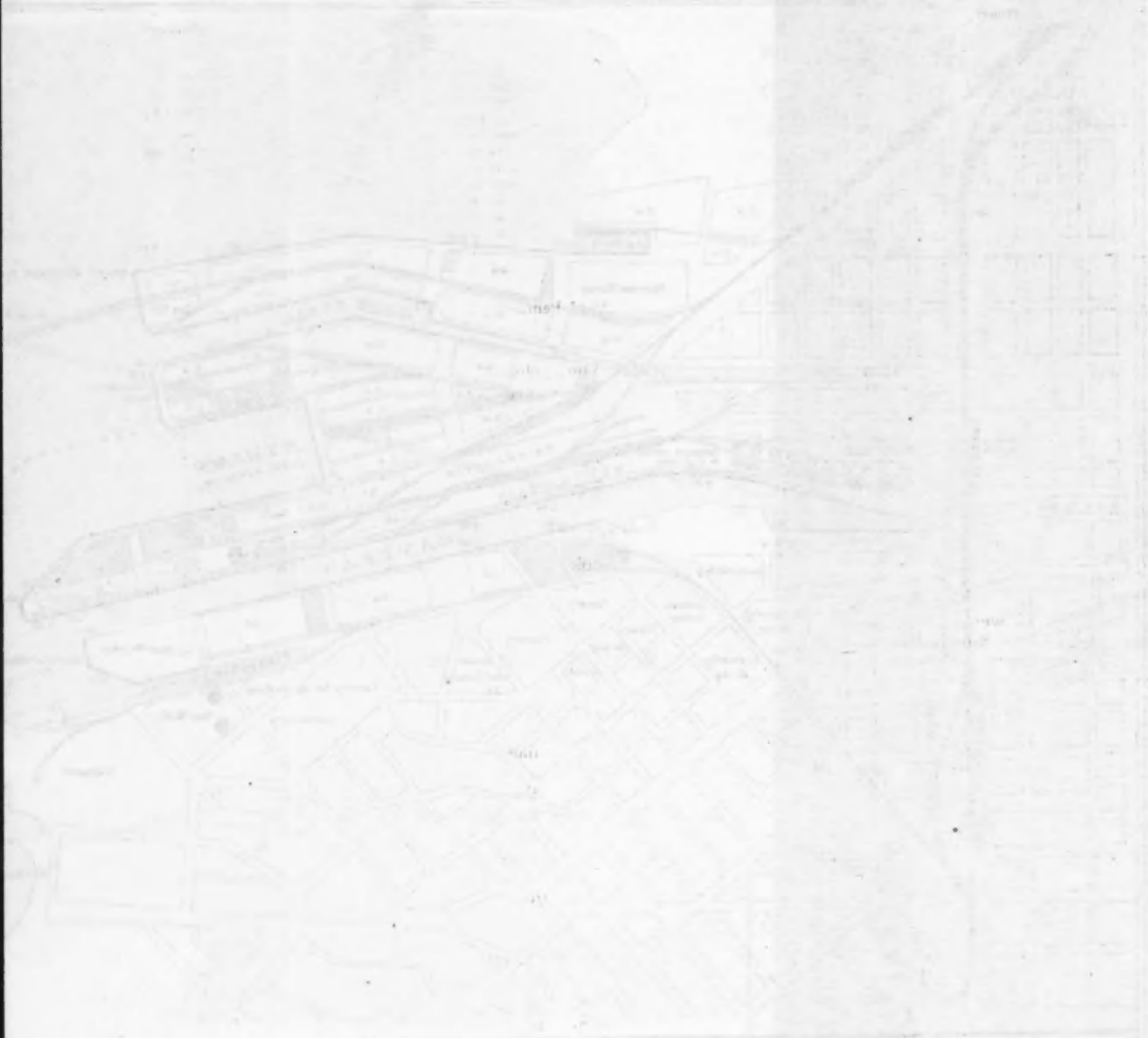


A SUPPLEMENT TO THE DOCK

# PORT OF GEESE

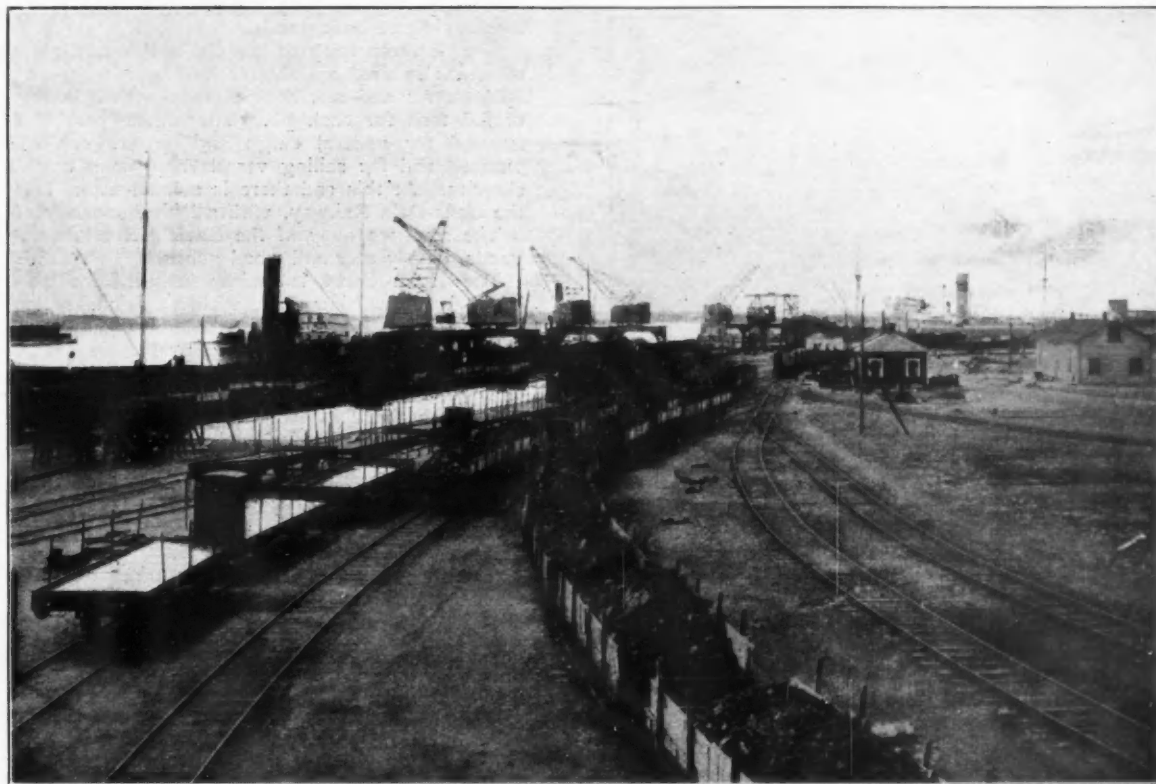
(A W E D N)

THE JURISDICTION OF THE HAMBURG-AMSTERDAM CANAL

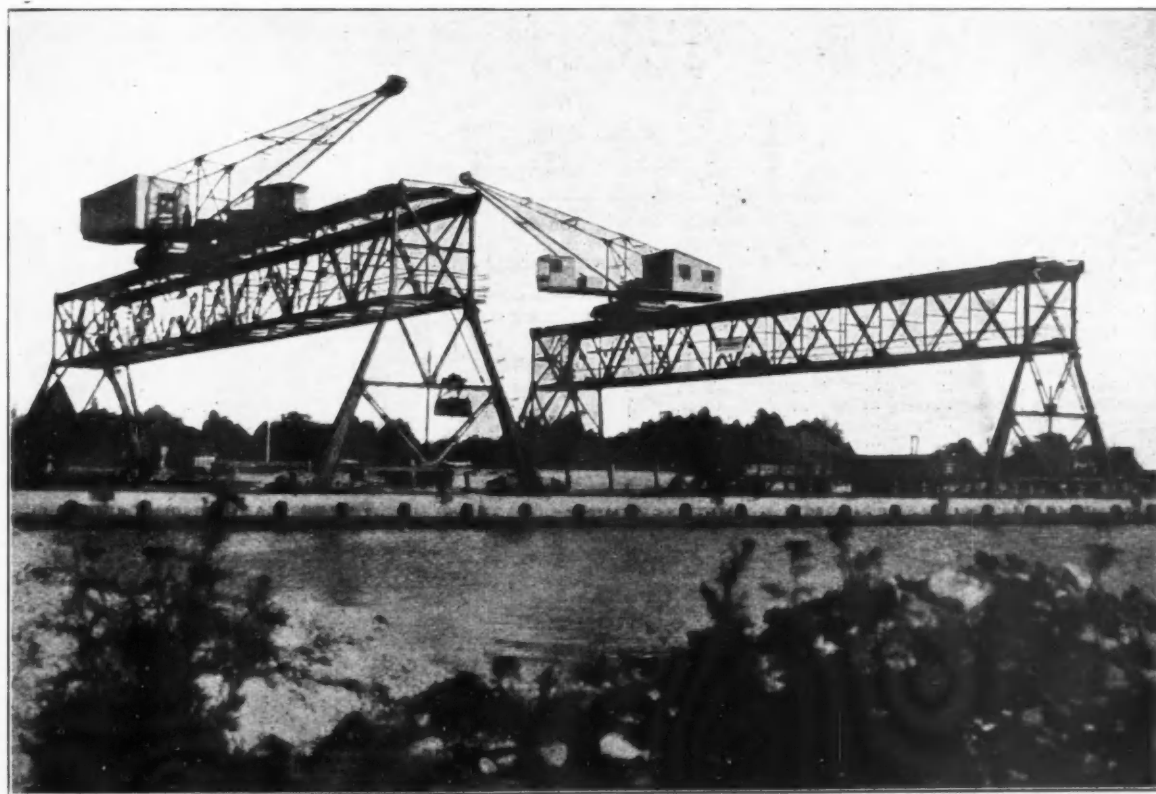




## *The Port of Gefle, Sweden.*



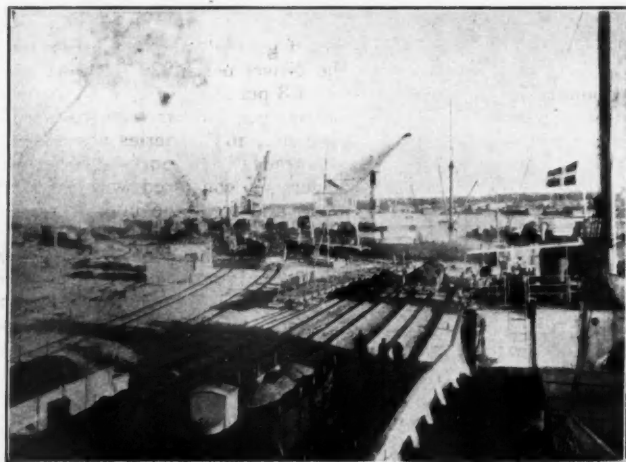
*Southern and South-Western Quay. Fredriksskans Harbour.*



*Fredriksskans Harbour. Bridge-Cranes on South-Western Quay. Lifting Capacity 8·5 Tons.  
Radius 15·5 metres. Bridge Span 54 metres. Capacity, 120 tons of Ore per hour.*

*The Port of Gefle, Sweden—continued.*

The outer harbour, or "Fredriksskans," is situated four kilometres from the town. The construction of this harbour was begun in 1898 and has been energetically carried on ever since, with the result that it now can fill the most exacting demands for the handling of bulk cargo. The general depth of water is 7.1 metres at mean water level. The cranes, of



Eastern Quay. Fredriksskans Harbour.

which there are 13, including four bridge-cranes, are all of the most modern construction. Two revolving bridge-cranes, primarily intended for the loading of iron ore and having a lifting capacity of 8.5 tons, have recently been installed.

The outer harbour also includes the roads, under shelter of a chain of skerries. The roads have a depth of 10 to 15 metres and afford good anchorage. Vessels loading here are generally

boats that transport wood goods from the near-by sawmill of Kastet, an important plant owned by the Korsnäs Saverks Aktiebolag.

The inner harbour includes the following:—

Nyhamn (the new harbour), with a depth of 5.5 metres at mean water level and equipped with two revolving cranes, having a lifting capacity of two tons, for the discharging of bulk goods.

The northern quay of the Gavle River, the eastern end of which is used mainly for bulk goods, has a depth of 5.35 metres and one double crane with a lifting capacity of 2.5 tons for each jib. The middle part of this quay is used for general cargo and passenger traffic; the western end for sailing vessels and small craft from the skerries. At this end there is a hand-crane, belonging to the Gefle-Dala Railway, with a lifting capacity of 15 tons.

The southern quay of the Gavle River is used for bulk goods, chiefly coal and wood goods.

The Holm Canal is mainly intended for wood goods. There is a revolving crane with a capacity of two tons.

The Northern Canal is used for sailing vessels and lighters.

*Storage Facilities.*

The outer harbour at Fredriksskans is well provided with storage areas, especially for coal and ore. The same holds good regarding the two quays on each side of the Gavle River. Along the northern quay there are several rows of warehouses for storing inward goods. There are also large areas adjacent to both the inner and the outer harbours suitable for industrial undertakings.

*Slip and Workshops.*

Within the harbour area there is a slip, belonging to Gefle Varvs and Verkstads Nya Aktiebolag. The slip can take vessels up to 1,800 tons gross register and up to a length of 275-ft. There is also a crane with a lifting capacity of 45 tons.

*Aden Port Trust.*

The following figures show the returns for the month of December, 1929:—

SHIPPING USING THE PORT.	No.	Tonnage
Merchant vessels over 200 tons ... ..	118	509,936
Merchants vessels under 200 tons ... ..	18	2,834
Government vessels ... ..	14	18,555
Dhows ... ..	112	4,011
PERIM.		
Merchant vessels over 200 tons ... ..	32	125,492

Rs.63,41,000/- as compared with Rs.67,22,000/- for December, 1928, and of exports Rs.47,06,000/- as compared with Rs.58,14,000/-.

The total value of both imports and exports together was Rs.110,47,000/- as compared with Rs.125,36,000/- for the corresponding month last year.

Imports during the month were above those for December, 1928, in the case of seeds, grey piece goods, and private treasure; and below in the case of coffee, grain, pulse and

*TRADE OF THE PORT.*

Article.	Unit.	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal ... ..	Tons	11,641	3,24,247	0	0
Coffee ... ..	Cwts.	5,374	2,35,075	3,286	2,06,526
Grain, Pulse and Flour ... ..	"	38,478	3,34,418	28,353	2,50,751
Gums and Resins ... ..	"	7,880	1,78,550	4,905	1,38,385
Hardware ... ..	"	0	12,442	0	17,389
Hides, raw ... ..	No.	3,819	10,661	7,366	32,110
Oil, Fuel ... ..	Tons	21,024	5,92,750	0	0
" Kerosene ... ..	Gls.	20,824	14,565	9,632	7,228
" Petrol ... ..	"	21,830	27,287	7,240	9,012
Salt ... ..	Tons	0	0	22,970	2,49,495
Seeds ... ..	Cwts.	5,839	77,587	2,643	38,107
Skins, raw ... ..	No.	490,388	4,14,750	602,295	6,32,551
Sugar ... ..	Cwts.	24,508	2,21,704	16,118	1,53,379
Textiles—					
Piece Goods, Grey ... ..	Yds.	4,664,162	10,84,453	3,496,617	8,42,123
" " White ... ..	"	792,391	2,33,613	404,182	1,33,882
" " Printed or Dyed ... ..	"	411,325	1,32,570	652,560	2,38,409
Twist and Yarn ... ..	Lbs.	319,020	2,27,072	388,640	2,77,755
Tobacco, Unmanufactured ... ..	"	448,000	1,44,899	418,320	1,17,203
" Manufactured ... ..	"	33,712	40,877	30,912	37,730
Other Articles ... ..	No. of Pkges.	64,441	11,26,136	24,087	6,45,902
Treasure, Private ... ..	"	0	9,07,735	0	6,77,810
Total ... ..	—	—	63,41,391	—	47,05,747

The number of merchant vessels over 200 tons that used the port in December, 1929, was 118 as compared with 116 in the corresponding month last year and the total tonnage was 510,000 as compared with 490,000.

Excluding coal, salt, fuel oil and military and naval stores and transshipment cargo, the total tonnage of imports in the month was 9,600 and of exports 5,800 as compared with 13,000 and 7,800 respectively for the corresponding month last year.

The total value of imports excluding Government stores was

flour, gums and resins, hardware, hides (raw), skins (raw), white and printed or dyed piece goods, twist and yarn, and tobacco unmanufactured and manufactured.

Exports were above those for December, 1928, in the case of seeds, grey piece goods, twist and yarns, and private treasure; and below in the case of coffee, grain, pulse and flour, gums and resins, hardware, hides (raw), sugar, white and printed or dyed piece goods, and tobacco unmanufactured and manufactured.



The Port of New York.

Latest Data issued by the Bureau of Commerce.

Foreign Commerce of the Port shows Big Increase in 1929.

PRELIMINARY estimates of 1929 total foreign trade show a most gratifying gain for the port of New York. Imports and exports show marked increases in dollar values and tonnage over every year since the inflation period of 1916-1920. In percentage relationship to the total foreign commerce of the entire United States, the 1929 share of the port of New York, measured in dollars, exceeds any one of the past seven years and, measured in tons, exceeds all years except 1922 and 1925.

Value and Tonnage of Foreign Trade of the Port of New York and Percentage of Total United States.

Year.	Value.	Per cent. of U.S.	Long Tons.	Per cent. of U.S.
1922	2,860,000,000	41.2	23,639,000	27.0
1923	3,317,000,000	41.7	22,953,000	24.7
1924	3,348,000,000	40.8	23,092,000	24.8
1925	3,850,000,000	42.1	23,734,000	25.6
1926	3,888,000,000	42.1	24,059,000	21.6
1927	3,769,000,000	41.6	24,839,000	25.1
1928	3,673,000,000	40.3	26,110,000	25.0
1929	4,128,000,000*	42.3	27,889,000†	25.5

\* December estimated. † Fiscal year ending June 30, 1929.

The exports for the year 1929 for the port of New York amounted to \$1,940,000,000, a gain of 8.8 per cent. over the preceding year and a larger value than for any year since the readjustment to present price levels in 1922. The largest gains in export trade were in automobiles, refined copper, iron and steel manufactures, packing-house products, and industrial machinery. The increasing trend towards export of these manufactured products accounts in part for the large gains in dollar value contrasted with a more or less stable trend of export tonnages through the port. The exports through the port of New York, however, are not limited to machinery and package goods, grain continuing to be an important item of commerce, amounting to over 2,000,000 tons, or about 20 per cent. of the export tonnage of the port.

Value and Tonnage of Export Trade of the Port of New York and Percentage of Total United States.

Year.	Value.	Per cent. of U.S.	Long Tons.	Per cent. of U.S.
1922	1,375,000,000	35.9	10,603,000	24.8
1923	1,519,000,000	36.4	11,236,000	22.6
1924	1,658,000,000	36.1	12,007,000	23.0
1925	1,775,000,000	36.2	11,771,000	23.7
1926	1,663,000,000	34.6	10,950,000	16.2
1927	1,731,000,000	35.5	11,435,000	20.1
1928	1,704,000,000	34.0	10,858,000	18.7
1929	1,940,000,000*	36.8	11,135,000†	18.7

\* December estimated. † Fiscal year ending June 30, 1929.

The 1929 imports showed a considerable increase over prior years, both in value and tonnage. The tonnage statistics show a larger increase than the dollar values because of the marked declines in prices of such important commodities as rubber.

Value and Tonnage of Import Trade of the Port of New York and Percentage of Total United States.

Year.	Value.	Per cent. of U.S.	Long Tons.	Per cent. of U.S.
1922	1,485,000,000	47.7	13,036,000	29.1
1923	1,708,000,000	44.4	11,717,000	26.9
1924	1,690,000,000	46.8	11,084,000	27.1
1925	2,075,000,000	49.1	11,964,000	27.8
1926	2,225,000,000	50.2	13,110,000	30.0
1927	2,041,000,000	48.8	13,405,000	31.9
1928	1,999,000,000	48.0	15,252,000	32.8
1929	2,188,000,000*	48.9	16,754,000†	33.5

\* December estimated. † Fiscal year ending June 30, 1929.

Local port industries, particularly the oil, copper, and sugar refineries, account for an increasing tonnage of raw materials which contributed a substantial portion of the import tonnage for 1929. The imports of petroleum, sugar, and copper for the fiscal year ending June 30th, 1929, aggregated 8,185,000 long tons, or 50 per cent. of the total import tonnage for that period. Aside from the refining industry, the other manufacturing establishments of the port district (which exceed 32,000, according to the latest estimate of the Census Bureau), the many merchandise distributors, and the 9,000,000 residents consume a vast quantity of the imports through the port of New York or fabricate a significant portion of the tonnage exported. A

recent survey of the distribution of general merchandise steamship cargoes, mentioned in the November, 1929 issue of the "Commerce Bulletin," showed 34.3 per cent. of the 13 cargoes to be drawn from or distributed in the port district itself. If the full cargoes of oil, sugar, etc., for refineries are added, 45 per cent. of the total foreign trade of the port seems to be local to the Metropolitan district, as compared with 55 per cent. which moves by railroad to and from the interior or by coastwise steamships to other domestic ports.

In addition to the stability given to the commerce of the port of New York by the large percentage local to the Metropolitan area, the diversity of products moving through this port helps to ensure a steady flow of traffic year in and year out, a healthy situation for the transportation, marine, and port utility Companies. The diversity of trade in grain, petroleum products, iron and steel, provisions, machinery and automobiles, and hundreds of miscellaneous commodities is a distinct contrast to the make-up of the commerce of ports such as Hampton Roads, Los Angeles, or even Baltimore, which have a heavy percentage of a single commodity, coal or oil, and are therefore subject to wide fluctuations with changes in producing conditions and world markets. The port of New York forges steadily ahead in first place among United States ports, while outports such as Hampton Roads and Baltimore may find sudden temporary prosperity in an abnormally large coal export to Europe—as, for example, in 1926 during the British coal strike. In that year the export tonnage of Hampton Roads nearly tripled as compared with the previous year, putting that port on a parity with New York in tons exported. In the next year, however, Hampton Roads' exports relapsed from 11,000,000 tons to 3,000,000, whereas the port of New York continued to increase.

The tentative figures for 1929 show that the gain in total commerce through the Port of New York over the preceding year was greater than the gains registered by some of its nearest competitors, as well as the total of all ports. A comparison shows the relative gain through the ports of New York, New Orleans, Philadelphia, and Baltimore:—

Port.	1928.	1929	Increase. Dollars.	Per cent
New York	3,673,000,000	4,128,000,000*	455,000,000	12.4
New Orleans	561,000,000†	609,000,000†	48,000,000	8.6
Philadelphia	302,600,000	368,000,000*	65,400,000	21.6
Baltimore	214,000,000†	208,000,000†	-6,000,000	-2.8

\* December estimated. † Twelve months ended October 31.

Steamship Services.

Steamship sailings in foreign and domestic trade routes from the port of New York in the year 1929 reached the grand total of 18,917, of which 7,207 were to foreign ports and 11,710 to ports in the United States on the Atlantic, Gulf, and Pacific Coasts. The departures reached a peak on Saturday, May 4th, when 102 ships sailed, 61 for foreign destinations.

Statistics issued by the Collector of the port indicate a gain not only in number of steamships clearing from the port of New York for foreign destinations, but also in the net registered tonnage of these vessels:—

Year.	Number of Ships.	Net Registered Tonnage.	Average Tonnage. Per Ship.
1927	6,516	26,778,472	4,110
1928	6,829	29,248,183	4,283
1929	7,335*	30,806,924	4,379

\* The discrepancy between figures issued by the Collector of the Port and the Port Authority's own record of sailings is explained by the Collector's classification as "intercoastal" ships sailing for Far East ports but touching at the Pacific coast of the United States.

The steamship clearances from the port of New York continued to exceed those of any other port in the United States, as shown by the comparative statistics on direct clearances for foreign ports compiled for the calendar year 1929 from the records of the Collectors of each port:—

New York, 5486; Baltimore, 622; Philadelphia, 767\*.

\* Twelve months ending October 31, 1929, as reported by the "Marine News."

The port of New York continues to attract steamship service, not only by reason of the huge pool of freight available for ocean carriage, but also on account of the number of passengers travelling abroad from this port.

*The Port of New York—continued.*

The immigration restrictions of recent years have diminished the importance of this class of passengers. Statistics from the Commissioner-General of Immigration for 1929 indicate an immigrant traffic approximately the same as last year. The total number for the fiscal year ending June 30th, 1929, was 158,238, as compared with 157,887 for 1928.

*Port Improvements in 1929.*

Substantial progress was made during the year in the construction of new pier facilities. Construction of 6,504 lineal feet of deep-water berthage was completed in 1929; 4,976 lineal feet will be completed early in 1930; and an additional 18,728 lineal feet are projected. The following table gives the location and details of these facilities:—

Project.	Constructed by.	Dimensions.	Progress.
Pier 3, N.R. ...	N.Y. Dock Dept. ...	720 by 140-ft.	To be completed early in 1930
Pier 34, N.R. ...	N.Y. Dock Dept. ...	1,024 by 160-ft.	\$765,000 preliminary appropriation
Pier 44, N.R. ...	N.Y. Dock Dept. ...	890 by 100-ft.	\$450,000 preliminary appropriation
Pier 46, N.R. ...	N.Y. Dock Dept. ...	840 by 100-ft.	Complete
Ft. W. 48 St. ...	N.Y. Dock Dept. ...	1,000 by 125-ft.	\$358,000 preliminary appropriation
Ft. W. 50 St. ...	N.Y. Dock Dept. ...	1,000 by 125-ft.	Not started
Prs. 9-10, E.R. ...	N.Y. Dock Dept. ...	650 by 140-ft.	Complete
Pier 13, E.R. ...	N.Y. Dock Dept. ...	606 by 60-ft.	Complete
Pier 14, E.R. ...	N.Y. Dock Dept. ...	306 by 60-ft.	Complete
Pier 10, Hoboken ...	D.L. & W. Railroad ...	1,200 by 40-ft.	Complete
Pier E, J.C. ...	Penn. Railroad ...	868 by 175-ft.	will be completed 1st April, 1930
Pier F, J.C. ...	Penn. Railroad ...	900 by 175-ft.	Preliminary survey
4 Prs. Little Basin, J.C.	Port Authority and Jersey City	1,200 by 150-ft.	

NOTE.—Provision is made for a third Pennsylvania Railroad pier when needed.

A number of other port improvements of great aid to commerce and shipping have been completed during 1929. The United States opened a new appraisers' stores building at King and Varick Streets in March, with a capacity more than double

that of the old structure which it replaced. A graving drydock capable of accommodating ships 730-ft. in length, the largest drydock in the port, was opened in December, 1929, at Erie Basin, Brooklyn, by the Todd Shipyards Corporation. The United States Government, through its District Engineers, expended \$4,400,000 for maintenance and improvement of channels within the port district.

*Improved Freight Handling Equipment.*

The railroads serving the port of New York continue to increase and improve equipment for handling freight through their terminals. New oil-electric locomotives have been installed at several points to take care of terminal switching operations. The D.L. & W. has contracted for three oil-electric locomotives

for delivery next summer to handle freight trains between classification yards at Secaucus and the Hoboken-Jersey City terminal in connection with its general terminal electrification programme.

*Weser Shipping in December and the Year 1929.*

The improved water conditions on the Weser, which took place in the beginning of December, permitted better utilisation of the barges in the middle of the month. However, during the last weeks of December, this had to be restricted once more due to renewed fall in the water level. The average depth from Hanover-Muenden was 1.59 metres and in the Middle Weser 1.93 metres.

The Doerverdener Lock, which was removed on account of ice, was damaged while being replaced so that the dam does not function properly at present. Moreover, the reconstruction of the lock was decided upon two years ago and is in preparation. After the removal of the lock the water level fell considerably, three vessels went aground and a large number had to wait above. With the assistance of more water from the Edertal Reservoir the vessels were refloated and all ships were able to proceed.

The year 1929 was a critical and ruinous one for Weser shipping. On the 10th January it came to a standstill due to frost. On the 28th and 29th January, after a slight thaw a few chains of barges were let through the Bremen Lock. However, on the 30th January severe cold again set in, and traffic could not be recommenced until the 18th March. Up to the 27th April the water level was sufficient to take all vessels, however, after this the level sank steadily until the beginning of October, with short intervals. The water level on the Upper Weser was kept at the low but navigable level of 1.00 metres from Hanover-Muenden by means of supplies from the Edertal Reservoir, but, due to the unusual drought, the supply of this reservoir gave out on the day mentioned, so that feeding from this source ceased. In this way traffic on the Upper Weser came practically to a standstill, and on the Middle Weser also (Minden-Bremen) shipping was very much influenced through the cessation of the extra water supply. Vessels could only be loaded to about a third of their capacity. From November water conditions improved slightly, but not until the middle of December were conditions normal, and then not maintained. Full loading was only possible on the last three days of the year.

Thus in the year 1929 the River Weser was blocked for two months by ice and for more than eight months water conditions were such as to necessitate restriction in loading of vessels. From this may be seen the urgent necessity for canalisation.

Traffic in December did not quite reach that of the previous month. Upstream and downstream a total of 195,400 tons went through the Weser Lock, or 1,900 tons less. The decrease fell to the downstream traffic which with 139,000 tons was 5,300 tons less. Gravel, stones and coal decreased. On the other hand potash and salt increased. Upstream traffic

increased with 56,400 tons by 3,400 tons. Grain transshipment exceeded the November result, while timber and flour fell off.

In the whole year 1929 a total of 2.08 million tons of goods went through the Bremen Weser Lock against 2.53 million tons in 1928. That means a decrease of 450,000 tons or 18 per cent. caused to a great extent by the above-mentioned ice and low water level difficulties. Downstream 423,000 tons less passed through. Coal transport decreased from 942,500 tons to 569,400 tons. That is actually somewhat less than the quantity of English coal imported into the Weser ports (573,600 tons). Other goods, also, excepting cement, did not come up to the figures of the previous year. But decreases here were much slighter. Upstream traffic was 37,000 tons less. 239,400 tons of grain, or 48,600 tons less, were shipped. Timber was the same. Piece-goods and English coal increased considerably. On the other hand flour and "other goods" decreased.

*Mobile Wireless Stations.*

A novel use of the mobility of wireless communication is to be made by the Egyptian State Telegraph Department, which has just ordered from the Marconi Company three wireless sets mounted in motor lorries.

These stations will be maintained for use when and where required in areas not supplied by the land telegraph and telephone system, so that practically any point in a wide range of country on either side of the Nile can be linked up at short notice with the main Egyptian telegraph system.

The motor lorries, also of British manufacture, will be of the six-wheel type, fitted with caterpillar attachments so that they will be equally mobile on hard or soft desert country. Each lorry will carry a medium wave  $\frac{1}{2}$ -kilowatt telephone transmitter and a small portable short-wave transmitter of 100 watts power. The aerials will be suspended from 70-ft. portable masts, and the wave lengths used will be between 600 and 2,150 metres on the medium wave set, and from 20 to 50 metres on the short-wave set. Self-contained power plant will be provided.

Egypt is a country in which, apart from the Delta, the towns and cities with their connecting railway and telegraph communications lie along a narrow strip of land bordering the Nile, with large areas of sparsely inhabited and desert country on either side.

In these circumstances the mobile wireless stations will be of particular value in providing special extensions of the telegraph system either as a regular service or in times of emergency.



# North-East Coast Notes.

## Unified Control of the Tyne.

THE possibility of a unified control of the Tyne, with all its docks and quays is gradually gaining in favour. Speaking at a meeting of the Tyne Commission in the middle of January, Sir William Noble (who has since become Baron Kirkley of Kirkley) said they had some great projects in hand, and he would like, before his year of office ended, to see the scheme at Jarrow Slake well advanced. He could see great possibilities in development, they were making slow but steady progress, and they had now a definite proposal from the London and North-Eastern Railway Company. The Engineer had been authorised to proceed with the survey of the Tyne Dock, which it might be necessary for the Commission to take over—at any rate if suitable terms could be arranged. He thought that was the right policy for the Tyne Commission to adopt.

"In fact," he added, "I dream of the day when the whole of the river and the whole of the quays on the river will be under one authority in order that we can follow one definite progressive policy. That, of course, is only my own ideal, and I am not committing the Board to any big scheme."

The Commissioners, he said, had agreed to a proposal put forward by the Docks and Trade and Commerce Committee to abolish the haulage charge of 4d. per ton on coal shipped on trawlers and tugs as from February 1st. Lord Kirkley said that decision of the committee had been reached as a matter of policy.

Although Lord Kirkley referred to the question of unified control as his own ideal, it did not stop there, for just a week later Mr. W. A. Souter, speaking at the dinner of the North of England Steamship Owners' Association, made an interesting statement. He said: "I have got to bring Lord Kirkley into this, and if one has a suggestion to make it is just as well to have a sponsor. I wish, as chairman of the Port Facilities Committee of the Chamber of Shipping, to support a suggestion made by Lord Kirkley on the lines that it would be a good thing if there were one port authority for all the port facilities on this river, including the public quays and the Newcastle quay. Newcastle quay is not entirely free from encumbrances, but if the idea finds favour, and there could be arrangements satisfactory to both sides, I venture to suggest that the idea of Lord Kirkley will benefit shipowners, importers, and, above all and most important, the general community."

"There is ample precedent for the suggestion," said Mr. Souter, "for many of the great ports are under unified control." And he instanced the Mersey, the Clyde, and the Port of London Authority. He hoped that the suggestion of Lord Kirkley would be carefully considered.

## New Wharf to be Constructed.

Sir W. G. Armstrong, Whitworth & Co. are to construct a new fitting-out wharf at the Walker South yard, and have placed the contract with Messrs. Purdie, Lumsden & Co., works contractors, Newcastle. A length of about 123-ft. of the existing north wharf is to be removed, and the new wharf will be constructed southward from a point about 104-ft. from the Company's northern boundary. The new portion of the wharf is to be about 187-ft. long and 28½-ft. wide, and it will consist of piles and decking. An electric travelling crane will be provided.

## Trade of Sunderland.

A most interesting report upon the trade of the port of Sunderland for the past year has just been issued by the River

Wear Commissioners. It states that during the twelvemonth 3,221 vessels, registering 2,520,328 tons, were cleared, and the tonnage rates received amounted to £76,339. In 1928 the number of vessels was 3,182 of 2,630,359 tons, and the tonnage rates received were £80,172. There was thus an increase of 39 vessels when compared with 1928, and a decrease of 110,031 tons. Of the tonnage using the port, 1,281,750 tons were engaged in the coasting trade, 1,103,815 tons in the European trade, and 134,763 tons in trade beyond Europe. The decrease in the coasting trade was 42,571 tons, in European trade 26,524 tons, and in beyond-Europe trade 40,936 tons. Apart from coal, the principal exports were iron and steel 4,644 tons, machinery 14,700 tons, pitch 2,592 tons, creosote oil 2,770 tons, petroleum and benzole 22,108 tons, binder twine 1,462 tons, and paper 2,525 tons.

The coal and coke shipped from Sunderland to various destinations during the past year was as follows:—

The total coal and coke shipments showed a decrease of 4 per cent.

Last year there were 33,934 loads of timber imported, against 30,853 loads in 1928; 81,118 loads of props, against 68,914; 16,662 tons of iron and steel against 7,529 tons; 57,384 tons of iron ore, against 133,970 tons; 114,725 quarters of grain, against 99,645; 20,811 tons of esparto, against 26,011 tons; 6,176 tons of wood pulp, against 4,656 tons; 88,001 tons of petroleum in bulk, against 73,405 tons; and 57,689 tons of sundries, against 52,289 tons.

## Dock Charges Reduced.

The struggle of the port to regain its trade and to arrest the diversion of the coal trade was referred to by Mr. J. E. Dawson, chairman of the River Wear Commissioners, at Sunderland in January. The past year in some respects, he said, had been one of considerable difficulty and consequent anxiety. They had a domestic affliction, whereby a large tonnage was deflected to one of their neighbours. That diversion was about three-quarters of a million tons per annum. Nothing they could do could apparently salve it, but they would not cease trying.

In 1929 another barrier was raised across their path. The derating allowance which was granted to the public railways had a peculiar effect on their trade, inasmuch as it attracted to another of their neighbours traffic which had always been shipped at Sunderland and which geographically belonged to Sunderland. It was found that the net cost of tonnage to the neighbouring port became less with the derating allowance than to the Wear, of which fact the shippers were naturally not slow to take advantage. Thus they were again faced with deflected traffic. In these circumstances it was vital that something should be done, and they decided to take their courage in their hands and reduce the shipping charges of the South Dock traffic by 3d. per ton. This had so far been in part successful in stopping the rot.

## Hartlepool's Increased Receipts.

The financial statement submitted to the Hartlepool Port and Harbour Authority in February showed a marked increase in the receipts from dues and tolls during the past year. Harbour dues amounted to £8,711, compared with £8,338 in 1928, while import and export tolls totalled £10,275, as against £9,535. The surplus fund at the end of the year was £21,252.

The chairman (Mr. W. Ropner) was re-elected.

## Personalia.

Sir William Noble, Bart., who was created a peer in the New Year Honours, received the cordial congratulations of

COAL				COKE.			
	1928	1929	% Increase or Decrease.		1928	1929	% Increase or Decrease.
	Tons.	Tons.			Tons.	Tons.	
Germany ... ..	695,890	702,070	—		1,250	—	—
Netherlands ... ..	175,080	162,167	7% dec.		—	—	—
Belgium ... ..	66,115	75,350	14% inc.		—	—	—
France ... ..	465,775	541,090	16% inc.		475	—	—
Italy ... ..	426,060	216,486	49% dec.		5,810	20,845	259% inc.
Other Countries ... ..	987,922	846,034	14% dec.		50,635	65,740	30% inc.
London ... ..	1,702,230	1,679,100	1% dec.		—	—	—
Other Coast Ports ... ..	451,230	577,110	28% inc.		—	80	—
Total ...	4,970,302	4,799,407	3% dec.		58,170	86,665	49% inc.
BUNKERS:							
Foreign Voyages ... ..	281,310	200,605	29% dec.		—	—	—
Coastwise Voyages ... ..	83,725	79,170	5% dec.		—	—	—
Grand Total ...	5,335,337	5,079,182	5% dec.		58,170	86,665	49% inc.

*North-East Coast Notes—continued.*

the members when he took the chair at the meeting of the Tyne Improvement Commission in January. The deputy chairman, Mr. H. P. Everett, said the honour which had been conferred on Sir William was an honour to Tyneside and to the river authority. Sir William Noble, in reply, said that on March 12th he would have completed 53 years on Newcastle quayside. Sir William took the title of Baron Kirkley of Kirkley in the County of Northumberland.

The Blyth Harbour Commissioners entertained to dinner, in Newcastle, Alderman Thomas C. Blackburn, an ex-Mayor of Blyth, on the occasion of his retirement from the service of

the Blyth Harbour Commission after 50 years' connection with it, 26 years of which were spent as collector of dues.

Following upon precedent, Sir Arthur Munro Sutherland, Bart., K.B.E., of Newcastle, has been nominated as president of the Chamber of Shipping, in succession to Sir William Currie. Mr. David Jones, J.P., is to succeed Sir Arthur as vice-president.

The Duke of Northumberland has been elected president of the North of England Steamship Owners' Association, with Mr. E. L. Beckingham as chairman and Mr. W. Leslie Runciman as vice-chairman.

*Jugoslav Harbours and their Development.*

**S**INCE 1918, when the Kingdom of the Serbs, Croates and Slovenes was created, one of the most important questions taken up by the Belgrade Government has been the problem of the harbours along Dalmatian coasts, and the construction of railways connecting these harbours with the Hinterland. Jugoslavia inherited from the former Austro-Hungarian Monarchy Sebenico, Spalato, Gravosa, Metkovich and Zelenika, and in consequence of the Italo-Jugoslav Treaty which was signed at Rapallo in 1920 a portion of the Port of Fiume, the Nazario Sauro Dock, has been turned over to Jugoslavia and represents to-day the harbour of Sussak which, from the following figures can be considered as the main port of the new kingdom:—

	1925.	1926.	1927.	1928.
Gravosa (centals) ...	1,857,666	1,652,435	1,814,770	2,865,949
Metkovich " ...	431,981	1,009,570	264,140	1,159,091
Almissa " ...	947,684	345,035	627,090	833,406
Spalato " ...	6,628,229	6,296,460	6,997,915	9,394,288
Sussak " ...	3,431,111	2,102,415	2,780,800	5,639,218
Sebenico " ...	2,783,829	3,473,495	3,082,210	3,125,211
Zelenika " ...	102,915	47,575	215,305	373,455

It will be noticed that there has been a general increase in the various ports, but if Jugoslav shipping is taken as a whole it will be seen that it does not reach 3,000,000 tons yearly, that is not even 50 per cent. of the total trade going through Genoa in the course of a year. Fifty per cent. of the Jugoslav maritime imports consists of coal, 30 per cent. of phosphates, while in regard to exports it may be said that 40 per cent. consists of lumber, 30 per cent. of cement, and 15 per cent. of cement stone, etc. The greatest part of the Jugoslav shipping therefore consists of goods in bulk, some of which is unloaded directly on the piers of the factories as is being done at Spalato with coal, and other goods destined to the cement and calcium carbide factories. This fact explains why, although the volume of trade which has gone through Spalato during 1928, has exceeded the amount of trade through Sussak, that this latter harbour can be considered as the main centre of Jugoslav shipping.

The Port of Sussak consists of the former Nazario Sauro Dock closed by a breakwater measuring 600 metres in length. The quayside does not reach 2,000 metres, including the small mole existing in the basin. On the quay of the Port of Sussak there are two covered warehouses having an area of about 6,000 square metres, while on the breakwater there are twelve 3-ton electric cranes which can be removed on a railway track. In the course of the past few years a new pier has been built along the mouth of the Eneo marking the frontier between Italy and Jugoslavia with space for three 2-3,000-ton ships and served by a crane. However, taking into consideration that the whole quayside at Sussak does not exceed 3,000 metres it will be noticed that harbour facilities will not be sufficient for the development of trade without prejudice to the safety of ships which, owing to shortage of space, have been kept waiting during the last winter in the open sea. As a matter of fact, the Jugoslav authorities are considering the opportunity of extensions which are, however, very difficult, as on one side the Port of Sussak confines with the Italian territory, and on the other the waters are very deep, and, during winter, when the bora (a wind blowing at the speed of 120 and 130 km. per hour) is blowing, very unsafe, so that it has been thought to exploit the Martinschizza Beach, East of Sussak, where the former Austro-Hungarian quarantine hospital was situated, and on the route of the railway between Sussak and Zagreb, besides Buccari, which is a very well-sheltered bay, and where the railway station is connected with the harbour, disposing of about 1,000 metres of quayside with a depth from 10-15 metres. How-

ever, both Martinschizza and Buccari are 10 and 20 miles distant from Sussak and it is hardly possible for the three harbours to be included into a single organisation.

The favourable position of Sussak with regard to the other Jugoslav harbours on the Dalmatian Coast, is also enhanced by its better geographical position in respect to the Hinterland. Considering Brod on the Sava, the centre of Jugoslavia, it will be seen that while the distance from Sussak is only 424 km., the distance from Spalato is 631 km.

On the other hand Sussak also disposes of the free zone which has been granted to Jugoslavia in the Port of Fiume, and which includes the Tahon de Revel Dock with about 1,400 metres of quayside served by about 10,000 square metres of covered warehouses and four electric cranes of 3 tons each. This section of the port, which is supervised by the Jugoslav Railway authorities and Custom's guards, although it is under the jurisdiction of Italy, enjoys the advantage that goods can be unloaded there from ships and conveyed direct to Sussak without the necessity of undertaking any steps without the Italian Customs authority, and it is believed that when it is ascertained that it is quite impossible to exploit Martinschizza and Buccari, the question will be settled by an increased exploitation of the Tahon de Revel zone in the harbour of Fiume.

On the other hand the Jugoslav Government with a view to securing a portion of the transit trade from Central Europe and the Balkans, to the Dalmatian harbours has granted a reduction from 10 to 50 per cent. on goods imported and exported through Jugoslav ports in connection with the Jugoslav Railways Administration tariffs. Furthermore a further reduction of 10 per cent. is granted on the Jugoslav Customs tariffs for certain goods imported and exported through Jugoslav ports, and finally special free Customs warehouses have been created at the various harbours.

There is no doubt that Jugoslav coasts offer a great interest, from the point of view of investment of capital, as it is certain that all the ports could easily be enlarged and improved, and railways connecting them with the Hinterland, fully built, but it remains to be seen whether the investment would pay as it must not be forgotten that the whole foreign trade of Jugoslavia does not exceed 7,000,000 tons of goods, of which something like 3,000,000 tons are by sea.

It is obvious that the development of one port only could be taken into consideration, but, of course, if you take Sussak you cannot very well serve Bosnia and Serbia, or if you take Spalato you cannot serve Croatia and Slavonia, which are the most important producing centres of the whole country.

However, if capital for the construction of ports is forthcoming, there is no doubt that investment in the operation of warehousing, unloading and loading, dry docking and towing would be highly profitable, as services at present are practically nil, as is noticed and by the fact that towage in Sussak is done by one or two Fiume enterprises, which have just been created, as towing here was done by Government tugs previously, and there is no doubt that the Jugoslav Government much facilitates foreign concerns doing business there.

*Completion of the Hunte from the Town of Oldenburg.*

The completion of the lower Hunte is to be commenced in February. This chiefly concerns widening and deepening of the river bed to take chains of barges of at least 600 tons. Work will be commenced with the Harbour of Oldenburg, where huge masses of earth on the right shore of the Hunte at the present junction of the Kuesten-Kanal at the dam, must be removed. The town of Oldenburg will take over the earth removed from here, thus improving the traffic conditions of the town.



# Bombay Port Trust.

## Administration Report for the Year 1928-29.

(Continued from page 102).

The trustees also have under consideration a scheme for affording preliminary training facilities at their workshops for selected apprentices of an approved standard of education whose parents are in a position to send them abroad subsequently for a course of training. In such cases the trustees will assist in getting the apprentices placed for training at suitable works in Great Britain and a probationary appointment of assistant mechanical superintendent is to be created on the Port Trust staff which will be open to selected Indian candidates who have completed the requisite training in India and abroad with a view to permanent confirmation in future vacancies if found suitable.

The first work financed out of the recently constituted Employees' Welfare Fund was the erection of a Maternity Home and Infant Welfare Centre at the Port Trust dock labourers' quarters at Wadi Bunder at a cost of Rs.22,570. The Maternity Home, which was opened by Her Excellency Lady Wilson, on the 16th November, 1928, has accommodation for six cases at a time, with provision for future extension and is equipped on the most modern lines. The management of the Home and Centre is undertaken by the Bombay Presidency Infant Welfare Society who provide the medical staff, medicines and milk for distribution; the Port Trust contributes Rs.500 a month towards the expenses, in addition to paying for the electricity and gas, water charges, telephone rental and maintenance of the building. The Home has proved extremely popular and during the first six months of its existence 70 patients have been accommodated. Owing to the increasing demand a scheme for extension is now being prepared. The Home was inspected by His Excellency the Governor, Sir Frederick Sykes, soon after his arrival in Bombay.

### Revenue (Details).

The year's revenue, excluding special receipts, compared with that of previous years, is shown in Table B below.

### Result of the Year's Working compared with previous Years.

Compared with the last five years the result of the working of the past year is shown in Table C below.

### Revenue Reserve Fund.

The surplus for the year under report amounting to Rs.5,95,414 has been appropriated to the Revenue Reserve Fund, which will thereafter stand as follows:—

	Rs.
Total as per Administration Report, 1927-28	72,77,788
Add—Revenue surplus, 1928-29	5,95,414
Amount transferred from the Securities Depreciation Fund, 1928-29	4,42,105
	83,15,307
Less—Appropriations for special purposes:—	
To meet arrears of Municipal General Tax on account of assessment, 1924-29	2,75,048
*Total	80,40,259
*Invested in public securities of the par value of Rs.76,94,300	74,44,794
Cash balance	5,95,465
Total	80,40,259

Taking the securities at their market value the actual value of the Revenue Reserve as at 1st April, 1929, amounts to about 68½ lakhs of rupees.

### Wharfage Fees.

Wharfage fees on merchandise at the docks and bunders amounted to Rs.84,37,428, a decrease of Rs.9,223 as compared with the corresponding figure for 1927-28. The decrease is due to the reduction of the wharfage rates on petrol and liquid fuel. Transhipment fees on cargo amounted to Rs.1,90,843, an increase of Rs.15,654 as compared with the fees for the year 1927-28.

The following figures show the comparison of import and export wharfage exclusive of surtax for the last three years:—

Year.	Import Wharfage. Rs.	Export Wharfage. Rs.	Total. Rs.
1926-27	51,58,968	27,00,328	78,59,296
1927-28	56,21,842	28,24,809	84,46,651
1928-29	51,00,655	33,36,773	84,37,428

### Bunder Revenue.

The revenue from the bunders shows a decrease of Rs.6.73 lakhs as compared with the preceding year. Of this decrease, Rs.4.50 lakhs falls under wharfage fees, due to the reduction of the wharfage rate on bulk petrol.

### Dock Dues on Vessels.

The receipts from dock dues on vessels amounted to Rs.5,58,881, a decrease of Rs.1,488 as compared with the year 1927-28.

### Ground and Shed Rents at the Docks.

Ground and shed rent receipts at the docks aggregated Rs. 5,08,795, a decrease of Rs.7,578 as compared with the year 1927-28, due to quicker clearance of cargoes from the transit sheds.

### Crane Fees at the Docks.

The receipts from crane fees at the docks amounted to Rs. 6,31,877 against Rs.5,72,134 in 1927-28.

There was a considerable increase in the earnings of the 60-ton floating crane "Sarut" which amounted to Rs.99,189 against Rs.59,221 in 1927-28. The number of heavy lifts during the year was 1,250 as compared with 582 in the preceding year.

### Land Estate Revenue.

The receipts under Land Estates aggregated Rs.49,27,198, an increase of Rs.92,392 as compared with the previous year, 1927-28. Ground rent receipts amounted to Rs.27,64,596, an increase of Rs.38,710 as compared with the previous year. The increase is mainly due to a greater demand for monthly tenancies, seasonal and casual occupations. The following figures afford a comparison:—

Year.	From leaseholds. Rs.	Rents realised. From monthly tenancies. Rs.	Total. Rs.
1924-25	15,76,083	12,94,011	28,70,094
1925-26	16,15,680	11,96,781	28,12,461
1926-27	16,42,193	12,46,548	28,88,741
1927-28	16,98,896	10,26,990	27,25,886
1928-29	17,09,590	10,55,006	27,64,596

TABLE B.

Average of three years ending 1922-23	Rs.	2,33,25,893
Do. do. 1925-26	"	2,72,87,448
During the year 1926-27	Rs.	2,64,02,353
Do. 1927-28	"	2,81,07,566
Do. 1928-29	"	2,86,07,850
Average	"	2,77,05,923

TABLE C.

	Income.			Expenditure.		Surplus.	Deficit.
	Revenue Proper Rs.	Surtax. Rs.	Special Receipts. Rs.	Expenditure Proper. Rs.	Special Expenditure. Rs.	Rs.	Rs.
1923-24	2,14,27,766	46,44,046	9,26,766	2,61,90,386	9,36,012	...	1,27,820
1924-25	2,26,01,556	47,75,428	9,48,694	2,73,20,809	9,65,025	39,844	.....
1925-26	2,36,53,748	47,59,801	9,53,590	2,76,53,225	10,03,623	7,10,291	.....
1926-27	2,19,90,516	44,11,836	11,56,821	2,75,07,995	11,98,260	...	11,47,082
1927-28	2,34,52,954	46,54,612	12,97,402	2,73,54,098	13,91,353	6,59,517	.....
1928-29	2,35,76,345	50,31,505	13,64,082	2,78,95,123	14,81,395	5,95,411	.....

**Bombay Port Trust—continued.**

The total area of land let on leasehold at the end of the year was 1,500,629 square yards against 1,466,780 square yards at the close of 1927-28. The number of leases in force on 31st March, 1929, was 557 against 555 on the 31st March, 1928.

**Merewether and Hughes Dry Docks Receipts.**

The revenue from the Merewether and Hughes Dry Docks amounted to Rs.2,89,215 as against Rs.3,25,166 in the previous year. The gross tonnage dealt with was 660,595 tons against 696,415 tons in 1927-28. The expenditure on working the dry docks was Rs.2,14,107 as against Rs.2,31,137 in the previous year. The proportion of working expenses to receipts during 1928-29 was practically the same as last year and it compares favourably with the ratio of expenditure prior to the introduction of the departmental working of the dry docks.

**Port Trust Railway Receipts.**

The receipts of the railway during the year amounted to Rs.29,17,298 as against Rs.26,47,994 in the previous year. Terminal charges were paid during the year by two railways at 6 pies per maund, the rate now agreed upon for traffic up to 50 million maunds per year.

**Interest and Miscellaneous Receipts.**

The receipts under interest and miscellaneous amounted to Rs.14,06,373 as against Rs.14,03,044 in the preceding year.

**Port Department.**

The revenue of the Port Department amounted to Rs.5,96,997, an increase of Rs.16,992 over the previous year.

**Pilotage Account.**

The Pilotage receipts, including interest on investments of the Vessels Replacement Fund, totalled Rs.5,57,788 as against Rs.5,40,969 in 1927-28. Pilotage, transporting and pilots' attendance fees realised Rs.3,97,031 as against Rs.3,85,201 in the previous year. The receipts from surtax amounted to Rs.98,629. The Pilotage Account closed with a surplus of Rs.1,17,313 which has been transferred to the Vessels Replacement Fund.

The following amounts were withdrawn during the year from the Vessels Replacement Fund:—

	Rs.
Balance of the cost of the new steam pilot vessel "Lady Wilson" .....	28,012
Part cost of new steam tug to replace the steam launch "Leda" .....	36,630
	64,642

**Revenue Expenditure (Details).****Comparison of Expenditure with previous Year and with Budget.**

The total expenditure charged to revenue under the several heads of account is compared with the actuals of 1927-28 and the revised budget estimates for 1928-29 in Table D below.

The total expenditure under General Account, Port Department and Pilotage Account aggregated Rs.2,78,95,123, an increase of Rs.5,41,025 as compared with the previous year.

**Ratio of Working Expenses to Receipts.**

Exclusive of debt charges, the ratio of working expenses to receipts compares favourably with previous figures. The statement in Table E below shows the percentage of working expenses to receipts during the last five years.

The reduction under staff expenditure in 1928-29 as compared with the year 1922-23, when the special retrenchment campaign was first started, amounts to about Rs.10 lakhs after taking into account the cost of the increments to employees on graded pay.

**Debt.****Total Debt.**

To avoid any increase in debt charges, the trustees curtailed their capital programme by postponing all works not immediately essential. No new loan was therefore necessary during the year under report. The total debt of the Board at the close of the year amounted to Rs.23,31,91,195, of which Rs.7,51,25,519 was due to Government and Rs.14,80,65,676 was on account of the Foreshore Securities and Debenture Loans due to the public.

**Total Expenditure on Capital Account and Financial Position.**

The total expenditure on capital account since the constitution of the Trust amounts to Rs.23,68,12,532 from which Rs.11,73,994 (being receipts from sale of old plant, etc., paid to Government in reduction of debt to 31st March, 1914), has to be deducted, leaving Rs.23,56,38,538. The cost of the old lightship "Colaba," the Kennerly and Dolphin Lighthouses, and certain other properties originally made over to the trustees by Government free of charge are not included in this amount and it also does not take into account the invested

TABLE D.

—	Actuals 1927-28.	Revised Budget, 1928-29.	Actuals, 1928-29.	Actuals, 1928-29, in comparison with			
				Actuals, 1927-28.		Revised Budget, 1928-29.	
				More.	Less.	More.	Less.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
SECTION I.—General Charges ... ..	25,15,532	25,11,963	25,03,718	...	11,914	...	8,245
" II.—Bundlers and Land ... ..	14,65,529	17,34,773	16,54,307	1,88,778	...	...	80,466
" III.—Railway Department ... ..	17,03,157	17,28,536	17,32,332	29,175	...	3,796	...
" IV.—Wet Docks ... ..	70,51,835	74,10,328	72,90,466	2,38,631	...	...	1,19,862
" V.—Dry Docks ... ..	2,31,137	2,31,479	2,14,107	...	17,030	...	17,372
" VI.—Rents ... ..	1,34,524	1,34,526	1,34,309	...	215	...	217
" VII.—Debt Charges ... ..	1,31,40,582	1,31,37,867	1,31,37,856	...	2,726	...	11
" VIII.—Special Repairs & Renewals ... ..	2,54,000	4,54,000	4,51,331	1,97,331	...	...	2,669
" IX.—Port Department ... ..	4,37,328	3,96,783	3,61,325	...	76,003	...	35,458
Total Expenditure (General and Port Department) ... ..	2,69,38,624	2,77,40,255	2,74,79,751	6,53,915	1,07,788	3,796	2,64,300
Pilotage ... ..	4,20,473	4,47,079	4,15,372	...	5,101	...	31,707
Special Expenditure ... ..	12,97,402	13,00,000	13,64,082	66,680	...	64,082	...
Grand Total ... ..	2,86,51,499	2,94,87,334	2,92,59,205	7,20,595	1,12,889	67,878	2,96,007
Net Difference ... ..	...	...	...	6,07,706	...	...	2,23,129

TABLE E.

Year.	Receipts.	Expenditure.			Percentage of working expenses excluding debt charges to receipts.
		Debt Charges.	Working Expenses.	Total.	
	Rs.	Rs.	Rs.	Rs.	
1924-25 ...	2,73,76,984	1,25,65,503	1,47,55,306	2,73,20,809	53.90 per cent.
1925-26 ...	2,84,13,548	1,32,11,057	1,44,42,168	2,76,53,225	50.83 "
1926-27 ...	2,64,02,353	1,32,07,224	1,43,00,771	2,75,07,995	54.16 "
1927-28 ...	2,81,07,566	1,31,40,582	1,42,13,516	2,73,54,098	50.57 "
1928-29 ...	2,86,07,850	1,31,37,856	1,47,57,267	2,78,95,123	51.58 "

**Bombay Port Trust—continued.**

funds and unspent balances of loans aggregating Rs.6,43,57,464 as under:—

	Rs.
General Sinking Fund ... ..	3,40,35,616
Victoria Dock Sinking Fund ... ..	78,02,203
Revenue Reserve Fund (par value and cash balance uninvested) ... ..	80,40,260
Depreciation, Emergency, Fire Insurance and other funds for special purposes ... ..	94,40,088
Cash being amount of unspent balances of loans ... ..	50,39,297
	6,43,57,464

It will be seen from the above figures that the total expenditure on capital account is Rs.23.56 crores whereas the outstanding debt is Rs.22.32 crores. Of the latter a sum of Rs.50 lakhs represents unspent capital balances in hand on 31st March, 1929, so that against an expenditure of Rs.23.56 crores, the trustees have a debt of Rs.21.82 crores. The difference of Rs.174 lakhs is accounted for as follows:—

Rs.58 lakhs being debt repaid to Government by annual equated payments; Rs.116 lakhs being appropriations from revenue to capital; a total of Rs.174 lakhs.

Regarding appropriations to capital the principal item is the sum of Rs.47 lakhs transferred from the Revenue Reserve Fund to capital during 1916-21 for expenditure on works as an alternative to borrowing at high rates during this period.

**Trade and Traffic Statistics.****Aggregate Value of Trade of Year.**

The value of the trade of the port as shown in the Customs returns, inclusive of Government transactions, was Rs.257 crores as compared with Rs.251 crores in the previous year, an increase of about 2.4 per cent.

**Traffic at Warehouses.**

The traffic at the warehouses during 1928-29 compared with that of the two previous years is shown in Table F below.

The stocks of piecegoods and yarn on 31st March, 1929 was 59,000 packages as against 49,000 packages on 31st March, 1928.

**Docks Bonded Warehouses.**

The traffic at the docks bonded warehouses is shown in Table G below.

The balances of piecegoods, twist and yarn at the docks bonded warehouses on 31st March, 1929, was 4,365 packages as against 5,768 packages on 31st March, 1928.

**Docks Hazardous Goods Warehouses.**

The receipts and deliveries at this warehouse during 1928-29 compared with those of the two previous years is shown in Table H below.

**Sales of Uncleared Cargoes.**

The sales of uncleared cargoes landed at the docks and bunders during the year realised Rs.23,447 as against Rs.19,230 in 1927-28.

**Dimensions of Vessels entering the Docks.**

Of the vessels which entered the docks 65 were over 470-ft. in length and 56 between 450 and 470-ft., as against 82 and 36 respectively, in 1927-28. Of the vessels over 470-ft. in length, 30 were over 500-ft. long and 8 between 490 and 500-ft.

**Dimensions of Vessels entering and leaving the Port.**

The largest vessel that entered the port was the ss. "Belgenland," length 670-ft., beam 78-ft., and gross tonnage 27,132 tons. The ss. "Mooltan" left the port with the deepest draft, i.e., 32-ft. 1-in.

**Vessels discharging Liquid Fuel.**

Thirty vessels discharged liquid fuel at Nos. 18 and 18 berths, Alexandra Dock Harbour Wall and "K" berth, Prince's Dock, during the year. The number of oil-burning vessels excluding tankers entering the port during 1928-29 was 138.

**Detention of Vessels.**

Seventy-nine vessels were detained in the stream for periods varying from 1 day to 5 days awaiting accommodation in the docks. In the case of 62 vessels the detention was for 2 days or less; 13 vessels were detained for 3 days, 1 for 4 days and 3 for 5 days.

**Dry Docks.**

The following figures show the occupation of the dry docks:—

		1927-28 Days	1927-28 Days
Merewether Dry Dock ... ..	...	219½	192½
	(Inner Section ... 90)		84½
Hughes Dry Dock ... ..	(Outer Section ... 85½)	192½	36½
	(Whole length ... 17)		11½

The largest vessel dry-docked during the year was the ss. "Ranchi" in the Hughes Dry Dock, 16,650 gross tonnage, 548-ft. long, 71-ft. beam.

**Reductions in Scales of Charges.**

The following reductions and concessions in the Scale of Charges were sanctioned during the year:—

**Docks Scale of Rates.**

- The application of a common wharfage rate for silk and cotton grenadines proving inequitable, the two qualities were classified separately and rated under silk and cotton piecegoods respectively in the Docks Scale of Rates.
- The Docks Scale of Rates was amended so as to provide distinctive rates for motor cars, packed and unpacked, and for motor bodies, motor chassis and motor parts, with effect from the 1st April, 1929.
- A special rate of 2 annas per tyre was introduced into the Docks Scale of Rates to provide for consignments of unpacked tyres.
- Export wharfage on liquid fuel for bunkers was reduced by 50 per cent. from 1½ to ¾ pic per gallon with effect from the 1st April, 1928.

TABLE F.

			1926-27.		1927-28.		1928-29.	
			Receipts.	Deliveries.	Receipts.	Deliveries.	Receipts.	Deliveries.
PACKAGE GOODS—								
Piecemeal and Yarn ...	Packages	...	130,008	130,739	172,703	159,046	181,264	171,921
Miscellaneous Goods ...	"	...	150,053	148,254	112,779	122,380	105,017	108,191
	Total	...	280,061	278,993	285,482	281,426	286,281	275,112
WEIGHT GOODS—								
Miscellaneous ...	Tons	...	10,139	10,493	9,050	9,563	8,176	7,834
Metal ...	"	...	7,471	7,344	4,202	4,903	5,736	4,073
	Total	...	17,610	17,837	13,252	14,466	13,912	11,907

TABLE G.

			1926-27.		1927-28.		1928-29.	
			Receipts.	Deliveries.	Receipts.	Deliveries.	Receipts.	Deliveries.
PACKAGE GOODS—								
Piecegoods and Yarn ...	Packages	...	20,068	25,254	33,746	31,796	18,885	19,788
Miscellaneous ...	"	...	24,316	20,946	20,895	22,212	18,238	18,256
WEIGHT GOODS—								
Miscellaneous ...	Tons	...	44,432	24,832	56,950	66,841	26,301	27,595

TABLE H

			1926-27.		1927-28.		1928-29.	
			Receipts.	Deliveries.	Receipts.	Deliveries.	Receipts.	Deliveries.
Packages	...	...	6,774	6,713	7,584	7,406	8,948	8,945



**Bombay Port Trust—continued.**

- (e) The rates for loading imported material into wagons and/or motor lorries by Port Trust agency were reduced in respect of packages weighing up to 16 cwts. from Rs.1-8-0 to Rs. 1-4-0 per ton in the case of stores loaded under the terms of Circular "B," and from Rs.1-8 to Rs.1 per ton in the case of stores loaded under contract.

**Bunder Scale of Rates.**

- (a) The wharfage fee on toys was reduced from As. 6 to As. 4 per package.  
 (b) Wharfage on loose tyres was reduced from As. 8 to Anna 1 per tyre.  
 (c) Wharfage on petrol was reduced from 15 pies to 9 pies per gallon.

**Capital (Expenditure and Works).****Capital Expenditure.**

The aggregate expenditure on Capital Account during the year was Rs.8,73,427 apportioned over the various works as follows:—

	Revised Estimates Rs.	Actuals Rs
Section I. New Works, ordinary	4,55,500	2,95,916
Section II. Alexandra and Hughes Dock Works	9,04,600	5,11,680
Section III. Port Trust Railway and Depots	2,81,200	65,831
	16,41,300	8,73,427

This outlay was met as follows:—

	Rs.
From Loan Balances in hand	8,68,409
From Sale proceeds of property	5,018
	8,73,427

**New Caisson for Communication Passage between P and V Docks.**

The material for this caisson, intended to replace the one built in 1891, was ordered from Messrs. Vickers-Armstrong, Limited, and arrived in January, 1929. The work of erecting the caisson was carried out in the inner compartment of the Hughes Dry Dock and was nearly completed by the end of the year. The amount expended during the year was Rs.1,29,851.

**Wadala Reclamation.**

A sum of Rs. 87,603 was spent during the year under report on the Wadala Reclamation, mainly in connection with the

surfacing and developing the area of 45,000 square yards leased to the Standard Oil Co. of New York for a petrol installation.

**Alexandra and Hughes Docks.**

The expenditure on the Alexandra and Hughes Docks during the year amounted to Rs.5,11,680, making a total of Rs.6,21,17,933 since the commencement of the work in 1904. The following are the principal details of the expenditure during 1928-29:—

	Rs.
Deepening entrance channel	3,42,056
Paving and metalling of wharves	59,147
Sett paving of railway tracks	29,737
Deepening mail steamer berth at Ballard Pier	17,844
Providing iron roller paths for cranes	15,374

The deepening of the Entrance Channel to 26-ft. below L.O.S.T. was continued during the year. A revised estimate amounting to Rs.32.30 lakhs was sanctioned for this work by the Board and Government. The excess of Rs.9.18 lakhs over the previous sanctioned estimate was due to the discovery of a number of patches of intensely hard rock below the level of the ordinary moorum or light grade trap rock. The presence of this hard rock at the western end of the channel was unsuspected until detailed borings had been made by the rock-cutting vessel "Nautilus."

The work of deepening the Mail Berth at Ballard Pier to 32-ft. below mean of L.O.S.T. was completed during the year under report.

The wharves of berths 4, 5 and 6, measuring 404 squares, were paved with sett stones on 6-in. cement concrete bed. The strip of uneven ground east of Nos. 14, 15 and 16 berths was levelled and five level-crossings were provided.

About 3,800 lineal feet of cast iron roller paths were laid on the granite copings of the Dock Wall during the year, making a total of 7,300 lineal feet since the commencement of the work, which is well in progress.

The work of installing a 20-ton weighbridge suitable for accommodating road vehicles, including the largest motor lorries, was started together with the erection of a chowkey as an office for the weighbridge clerks. The work was well in hand by the close of the year.

**Maintenance Dredging.**

The total quantity dredged during the year on revenue account was 3,663,760 tons as against 3,846,325 tons in the previous year, 1927-28. The average cost per ton on maintenance dredging was 3.47 annas per ton.

**Harbour Engineering Notes.****Automatic Arc Welding Plant.**

THE arc welding process which is to-day in general use in most engineering works for repair and general construction purposes, has certain characteristics which have an important bearing on the success or otherwise of the process. The three chief variable factors in the process are:—1, the welding machine; 2, the electrode; and 3, the operator. The most important of these to-day is the operator, as the welding units and electrodes have been developed to a very high state of efficiency.

In order to eliminate as far as possible the dependence hitherto placed on the manual dexterity and experience of the operator devices have been developed for automatically feeding a continuous metallic electrode into the welding arc at the correct speed necessary to maintain an arc of constant length.

In these devices the electrode metal is fused to the work with an automatic precision forming a smooth and even deposit of uniform quality. The weld thus produced is stronger and more effective than that made by the ordinary process. The operation of the apparatus is steady and consistent, even when applied to irregular surfaces, resulting in more rapid deposition of the metal and low current consumption. The use of a continuous electrode wire eliminates the losses due to waste ends and the time otherwise taken in changing electrodes; it also eliminates the cold spots encountered with hand welding.

Such equipments can be used in connection with any d.c. welding circuit, and will handle any size of electrode wire, the choice depending entirely upon local conditions and the nature of the work to be done. The welds are made with the minimum of human interference, the operation being started and stopped by means of a push button switch.

The high speed and efficiency which characterise the operation of the automatic welder especially adapt it to quantity production, continuously repeated work, building up processes and practically every form of seam welding.

The actual speed of operation naturally varies with the work to be done, butt welds being made at speeds varying from 4-in. to 20-in. per minute, and metal being deposited at rates varying from 1 to about 5-lb. per hour.

The automatic welder forms an important and valuable addition to the plant required in shipyards for many purposes, such as boilers, mechanical handling plant and miscellaneous repairs.

In this device the welding head consists of a steel body carrying feed rolls, adjusting devices and straightening rolls. These draw the electrode wire from the reel, straighten it and feed it to the work. The feed rolls are knurled in order to afford a firm grip and are adjustable for sizes of electrode from 1/16-in. to 5/32-in. diameter.

The welding head is mounted on a casting which carries a d.c. motor together with the necessary gearing and mechanism to drive the feed rolls. Provision is made for such hand adjustment as may occasionally be necessary when the work presents unusual irregularities, and also for permanent adjustment to different classes of work. A special plate insulates the automatic welder from the machine or support on which it may be mounted.

In operation the feed rolls are driven by a small d.c. motor. The fields of this motor are excited from a separate source of d.c., but the armature is connected across the arc between the electrode and the work. Therefore, as the arc tends to lengthen, the speed of the motor will increase and feed the

Harbour Engineering Notes—continued.

electrode wire more rapidly. This brings the arc length and arc voltage back to its predetermined value. The reverse operation occurs if the arc length tends to shorten. This action is practically instantaneous.

The welder is automatically controlled by means of a panel which carries an ammeter and a voltmeter for the welding circuit. The ammeter indicates the current being used and the voltmeter indicates the arc length by showing the voltage directly across the arc. The panel is also equipped with the necessary automatic control relays and contactors for controlling the action of the feed motor, together with the rheostats for adjusting the speed to suit various sizes of electrode wire. A start and stop push button switch is used, placed so that the equipment can be readily started and stopped by the operator without having to leave the work.

The source of current used for welding may be either a.c. or d.c., but it is necessary to have d.c. for the excitation of the field of the feed motor. The value of the welding current has to be adjusted to suit the work in hand by means of the control panel of the welding set.

When the equipment is in use, the feed motor is started by means of the push button, and the electrode wire is driven forward until it touches the work. The moment contact is made the potential between electrode and work falls to zero, which causes a contactor on the control panel to operate, thereby reversing the feed motor and withdrawing the electrode wire from the work a sufficient distance to establish the proper arc length. The motor thereafter continues to feed the electrode wire to the arc at the correct speed.

On account of the variety of conditions under which this equipment may be used, it is provided with a base which may be bolted to any form of support. It may be held stationary and the work travelled past the arc, or the welding head may be movable and the work held stationary. Provision must be made, however, for travelling one or the other at a uniform speed in order to carry the arc along the weld. In the case of straight seams, a lathe or planer bed may be used for this purpose, and for circular seams a lathe or boring mill may be used.

If desired, the operation can be made entirely automatic, by means of interlocks on the control panel. These interlocks cause the electric motor operating the travel mechanism to start or stop simultaneously with the operation of the welding head.

The widest application of automatic arc welding is in the straight line work and in the building up of cylindrical surfaces. In both cases either the work or the machine, or both, can be made to travel. In the welding of shafts and other cylindrical surfaces the material to be welded is arranged to turn under the arc at a definite rate. At the same time the welding head is travelling along the shaft. Thus a spiral of metal can be laid down so that each succeeding layer will fuse into the previous one.

Lifting Magnets for Unloading.

During recent years the lifting magnet has come more and more into use for handling iron and steel products, both in the raw and finished state, and one use to which they have been put is that of unloading from barges and railway trucks. The construction of these magnets is very similar to that adopted for the rectangular magnet, which was described on p. 123 of the *Dock and Harbour Authority* for February, 1927, so that any extended description here is unnecessary.

These magnets are made to withstand the extremely rough usage to which they are likely to be subjected, heavy ribs for the protection of the terminals being cast integral with the body, and deep ribs on the outer periphery to add strength and rigidity and to protect the through-bolts holding the outer pole shoes.

Moisture-proof construction is a feature of the modern magnet and successful under-water operations not long ago were accomplished with an Igranic magnet, which was used 70-ft. under water. This corresponds to an external hydrostatic pressure of 35-lb. per sq. in. and there was not the least evidence of fracture of the seal. In view of the fact that moisture is responsible for considerable trouble with lifting magnets, moisture-proof construction is an important point.

As an instance of the savings that can be effected by the installation of lifting magnets in place of manual handling, the following instance may be quoted:

Forty men were originally employed in a yard for loading and unloading railway trucks, handling 20 trucks per month (loading 20 and unloading 20, that is to say, 40 trucks in all were dealt with). The annual cost of upkeep of the tools and wheelbarrows alone was £220. Subsequently a 52-in. circular lifting magnet was installed and the capacity of loading was increased to 35 tons. At the same time 71 trucks per month were loaded and unloaded and 20 of the men were placed on

more useful work. The working costs of the magnet were £40 per month, including the crane, and the complete installation cost was returned in under 12 months. The record of this magnet so far is the handling of 40 tons of rail anchor scrap in 40 minutes.

An Italian All-Welded Automatic Rotor Dredger.

Interesting particulars are now available of the all-welded automatic rotor dredger "Trento," which has recently been constructed in Italy by the Soc. A. Officine Trevisane di Treviso. The following are the more important particulars of its design:

Theoretical discharging capacity, per hour	...	70 cu. m. (93 cu. yds.)
Maximum dredging depth	...	4.50 cu. m. (14.75 ft.)
Distance to discharge end	...	300 cu. m. (984 ft.)
HULL: Length	...	18 cu. m. (59 ft.)
Width	...	5 cu. m. (16.5 ft.)
Height	...	2 cu. m. (6.5 ft.)
Motor for Mud Pump	...	120 h.p.
Motor for Rotor Head and Cutter	...	40 h.p.

By the use of welding gusset plates for joining the vertical trusses to the side plating and the beams to the upper deck and transverse girders were eliminated. The longitudinal stiffening girders were attached direct and flat iron straps were used in the place of angles. Fewer joints were necessary in the vertical and horizontal frames, while the fitting of the stiffeners along the joints between the deck side and bottom plating was more simple than would have been possible rivetting. Another important advantage was that a perfectly water-tight hull was obtained without the necessity for elaborate caulking after completion.

This dredger proved so successful that Officine Meccaniche Trevisane have extended the use of welding to the construction of other dredgers. The following list gives the main particulars of one of the largest of these:—

Theoretical discharging capacity, per hour	...	120 cu. m. (156 cu. yds.)
Maximum dredger depth	...	6 cu. m. (19.65 ft.)
Distance to discharge end	...	300 cu. m. (984 ft.)
Discharge distance of two lateral pipes	...	30 cu. m. (98.5 ft.)
HULL: Length	...	24 cu. m. (78.75 ft.)
Width	...	6 cu. m. (19.65 ft.)
PRINCIPAL TOWER: Height from deck	...	6.50 cu. m. (21.5 ft.)
Motor	...	220 h.p.

The electric arc process in conjunction to Quasi-Arc electrodes were used on these dredgers.

Correspondence.

To the Editor of "The Dock and Harbour Authority."

Dear Sir,—I beg to refer to page 66 of your interesting number for January, 1930, in which you make reference to the Port of Aden, and to the hindrance to trade in the absence of docks.

Aden is a "port of call," and ships come here to bunker or to work a certain quantity of cargo only and do not wish to stay one hour longer than necessary. It is therefore essential for quick despatch that they should unload or load at both sides, and, for this purpose, it is much more economical of time for them to tie up in the stream and work into lighters than to come alongside a quay with lighters on the outer side.

Aden has to stand practically on her own feet, so that the Trustees of the Port are very wisely at this moment expending their savings in the deepening of the Harbour, so as to accommodate the larger ships, rather than in the construction of deep water wharves for one or two ships, as some persons would advise.

That Aden is in some way a world emporium is due largely to the feeling of security and justice under the aegis of the British flag, which has encouraged European, Indian and Arab merchants to set up business here in this free Port rather than in other Ports more directly connected with a productive hinterland. It is also largely due to the very safe and satisfactory harbour which the Trustees have the privilege of controlling and improving.

Yours faithfully,  
D. S. JOHNSTON, Major, R.E.,  
Chairman, Aden Port Trust.

January 21st, 1930.



## The Humber Ports.

### Queen's Dock Estate, Hull.

THE terms of the traffic agreement between the Hull Corporation and the London and North Eastern Railway Company for the purchase of the Queen's Dock Estate at Hull, have been issued. Under the agreement the railway company is to sell to the Corporation the estate of approximately 22½ acres, including the dock, the quays and warehouses and certain specified buildings at an inclusive price of £117,000. The company reserves certain rights such as access to the dock offices (which are excluded from the sale). At the same time the sale is to be subject to all expiring leases and tenancy agreements, the total rents from which are £3,610 per annum. It is provided that the purchase price is to be paid in instalments, the first of £11,700 being payable 14 days after Royal Assent is given; £42,000 one year later; £43,000 two years from the Royal Assent; and £20,000 on completion of the company's obligation as to filling in the dock. In the schedule of the agreement it is stated that the company is to deposit in the dock, including the locks maintenance dredgings removed from the Town docks or other convenient source, equal to 75 per cent. of the volume of the dock; the remaining 25 per cent. to be done by the Corporation who have also to complete and level off within four years. The Corporation is to construct and maintain a permanent retaining wall across the lock pit between Queen's Dock and Prince's Dock. A retaining wall is also to be built at the old harbour end of the dock.

With regard to the acceptance of the scheme a curious position has arisen. The Hull City Council at their February meeting was expected to confirm the agreement, but, instead, passed an amendment issued from the Labour benches to refer the Minutes back to the committee with a view to securing an alteration in one clause relating to restrictions which the railway company seek to impose. This was done in a depleted chamber despite the appeals of Sir Alfred Gelder, the chairman of the committee, who said that the Bill might possibly come before Parliament very shortly. If the agreement were unsigned they would be entirely in the hands of the L. and N.E.R., who might withdraw the Bill at the last moment. Some question of title has been raised by Dr. T. C. Jackson, Solicitor to the Hull Chamber of Commerce (who are opposing the sale). The land for the dock was given by the Crown and the contention is that the railway company have no legal title to dispose of it. The Town Clerk, however, pointed out that in his opinion the question of title and any question affecting the ground would be raised during the progress of the Bill through Parliament and would be dealt with at that stage.

The Hull Chamber of Commerce and Shipping have decided to lodge a petition against the Bill and confirmed the recommendation of the Parliamentary Committee that the Chamber maintain its opposition to the proposal until the interests of the trading community are sufficiently safeguarded. The point of view of the Chamber appears to be that the Queen's Dock is required for small craft and lighters and that the railway company should be compelled to repair the gates and provide through access to the River Hull from the Town Docks. Another consideration is that the City cannot afford the scheme having regard to the present heavy financial commitments and the prospect of an increase of 2s. 3d. in the £ in the local rates.

### Humber Conservancy Board Meeting.

At the meeting of the Humber Conservancy Board a report was read from the Parliamentary Committee recommending that no action should be taken, as the interests of the Board did not appear to be affected, in regard to the London and North Eastern Railway Company's Bill, 1930, under which powers are sought to fill in the lock leading from the Humber into the Alexandra Dock, Grimsby; to sell the Queen's Dock, Hull, to the Hull Corporation and to fill it in. The Board approved of the decision of the Marine Committee that the chairman, Mr. J. Bentley Bennett, and Captain J. W. Truman, should attend a joint conference of representatives of the Board of Trade, the Humber Conservancy and the Air Ministry with regard to the Conservancy's objections to the extension of the sea danger area of the Donna Nook air gunnery and bombing range. A letter was read from Mr. W. Minnitt Good, resigning his membership of the Pilotage Committee of which he has been chairman for the past ten years. A vote of thanks to Mr. Good was unanimously passed on the motion of the chairman (Mr. J. H. Fisher, J.P.), seconded by Mr. A. W. Atkinson. Mr. W. A. Massey was appointed in the place of Mr. Good and Mr. Hutchinson elected as the Hull Shipowners representative on the same committee. Capt. F. R. Soulsby has resigned his seat on the Board and Capt. Collins has been

appointed by the Hull Trinity House in his place. The Board passed a vote of condolence with the relatives of Mr. H. A. Allaway, a member of the Board who recently died at Hendon.

### Additional Dry Dock Accommodation required at Hull.

At a meeting of the Hull Development Committee the Sheriff (Mr. Fredk. Till, J.P.), remarked that additional dry dock accommodation was required at the port. They were, he said, shortly to have a Royal Mail Steamer with a large cargo of seed. It was necessary to get these boats "turned round" quickly, but very often the vessels wanted to go into dry dock and there was not the accommodation for them.

### Hull Chamber of Commerce Meeting.

At the Hull Chamber of Commerce meeting a report on railway charges at railway-owned docks was presented in which it was stated that at present the onus is on the railway companies to apply annually for the continuance of their increased charging periods. Clauses in the L. and N.E.R. Bill in the present session of Parliament, however, make two important departures, viz., that the company desires to make permanent their increased dock charges, and that instead of applications for increased or decreased charging powers being made to the Minister of Transport acting under the advice of the Rates Advisory Committee, the application should be made to the Railway Rates Tribunal. The Hull interests are in favour of the present procedure and are acting in co-operation with the Traders Co-ordinating Committee.

### New Fish Dock at Grimsby.

Plans and specifications for the new fish dock at Grimsby have been completed and the legal advisers are now engaged upon the terms of contract as a preliminary to inviting tenders for the work of construction which it is hoped will be commenced in April. The scheme includes the re-construction and enlargement of No. 1 Fish Dock, the provision of two bunkering staithes and a modern slipway with eight berths for the ship repairing. Other improvements include the removal of No. 1 and No. 2 coal drops in the Royal Dock, the construction of a modern coal staith of reinforced concrete with four berths, belt conveyor and rails, a modern two-storey transit shed on the east side of the dock with electric cranes. The Port Authority are also understood to have under consideration the possibility of relaying the rails in the dock area with a view to avoiding shunting traffic over the Cleethorpes road level crossing.

### Improvements at Goole.

The new improvements to be undertaken by the London, Midland and Scottish Railway Company at Goole to cost £110,000 are to go ahead immediately. The first tenders for the extensions on the north side of the new West Dock have already been placed. The dock is to be made accessible to steamers up to 3,000 or 4,000 gross tons. To obviate the difficulties of the navigation of the river for vessels of this size the owners of the port are in conjunction with the Humber Conservancy Board building new training walls at Trent Falls, as already reported in these columns. At Goole itself there is under construction a new entrance lock, and jetty 375-ft. long and 40-ft. wide with a depth on the sill of 25-ft. and 18-ft.; and a new dry dock 350-ft. long by 50-ft. at an estimated cost in round figures of £400,000.

### Kiel Canal Annual Report for 1929.

A report received by the Department of Overseas Trade from His Majesty's Consul-General at Hamburg states that in spite of the severe ice conditions in the Kiel Canal at the beginning of 1929, when the canal was closed to shipping for five weeks, the development of traffic through the canal during the year has been satisfactory; 49,090 vessels aggregating 21,613,088 net reg. tons passed through during 1929 as against 54,102 vessels aggregating 20,308,311 net reg. tons in 1928, 25,837 of 19,785,681 net reg. tons being steamers and motor vessels and the remainder aggregating 587,525 net reg. tons sailing vessels, lighters and barges. The vessels were loaded as follows:—2,498 with coal; 308 with passengers; 904 with stone; 619 with iron; 3,239 with timber; 5,684 with grain; 8,782 with ore; 305 with cattle; 10,722 with piece goods; 866 with general cargo; 13,193 empty or in ballast.

Compared with 1913, the traffic has increased over 100 per cent. As the canal dues are reckoned according to the tonnage of the ships the revenue has increased proportionately.

Personal enquiries regarding shipping and transport matters should be made at the City Office of the Department (Shipping and Transport Section), 73, Basinghall Street, London, E.C.2.



## *The Design and Construction of Large Power Transformers.*

A REVIEW of the progress made by the leading electrical manufacturers during the past year reveals the large number of orders that are coming to this country from the Dominions and from foreign countries for electrical power plant. One branch of the electrical industry in which British engineers excel is in the manufacture of transformers of all sizes. For instance, one company alone, the B.T.H., has shipped or on order at the present time transformers with tap changing on load equipments aggregating over one million kva. In addition to orders for 132,000 volt transformers for the grid scheme, this company holds a contract for lower voltage transformers for the South-Eastern area.

The conductor thus insulated is covered with cotton strands in order that it may receive a mechanical protection. This covering is not regarded as possessing any electrical insulating properties.

It is standard practice to weld electrically all joints in the winding. The joints thus made have a mechanical strength and an electrical conductivity at least equal to the remainder of the conductor, and are far superior to soldered or brazed joints.

The insulated conductor having been suitably prepared, is then conveyed to the winding department where the various sections are wound on the flat in one continuous length. Conductors are wound together in parallel as required with



*A British Shop for the construction of Large Power Transformers.*

Many interesting features are to be noted in connection with the manufacture of these large power transformers. For instance, experience shows that damage to the insulation and eventual breakdown, may be caused through ragged edges or slivers on the copper conductor, and it is, therefore, standard practice at Rugby to clean and burnish the whole of the conductor carefully before insulation, in order that such defects may be removed. The conductor is first bent in one direction and then passed through rotating brushes. It is then cleaned, bent in the reverse direction, and submitted to a repetition of the process.

In order that the copper dust created may not be dissipated into the surrounding atmosphere, the processes described are carried out in exhausted chambers, and, as a further precaution, the complete machine is located in an exhausted compartment.

The conductor thus prepared is then passed through an insulating machine where it is wrapped with the required number of layers of pre-treated paper insulation. This pre-treatment consists of cutting into exact widths and vacuum drying, and it is followed by impregnation so that all moisture may be removed from the paper before it is wrapped on the conductor.

It has been found that the usual lap joint strains the paper and entraps small quantities of air, which on high voltage transformers may become ionised and cause cracking of the paper insulation where it is strained. For this reason a special method of applying paper insulation has been developed which overcomes the difficulties mentioned above.

carefully shaped transpositions to ensure that eddy currents in the winding are reduced to the minimum, and in no case is any conductor merely twisted, as such a process is liable to damage the insulation.

All coils are circular, this important feature being adopted in view of the fact that under short-circuit conditions any coil tends to assume a circular shape and the insulation of any coil not thus wound is certain to be strained when such conditions arise. B.T.H. coils are usually wound on cylinders of treated insulating paper, care being taken that the winding is uniformly and symmetrically carried out to reduce mechanical forces to the minimum.

The coils are separated from each other and from the insulating cylinder by radial and axial spacers interlocked in such a manner as to prevent their movement relative to the windings. There is no dependence on oil pressure, cement or varnish treatment to hold the spacers in place. The liberal oil ducts provided in the design are therefore maintained in service. Fig. 1 illustrates these points.

The winding thus consists of a series of disc coils with suitable oil ducts between coils, the oil being in contact with two sides of each conductor. This arrangement gives exceptionally good cooling, and, further, the axial spacers being at right angles to the conductors, give the minimum of blanketing. Reinforcement of the insulation on end turns is carried throughout a coil section, thus avoiding insulation joints inside the coil.

The electrostatic uniformity reduces voltage concentration under stresses due to switching transients or lightning storms

*The Design and Construction of Large Power Transformers—continued.*

in the vicinity. The uniformity radially of ampere-turn distribution minimises all mechanical forces.

When the winding is completed it is clamped axially and subjected to a drying and shrinkage treatment. The complete stack is then placed in a hot vacuum tank and the exhaust is passed through a condenser in order that any moisture may be condensed and detected. The process is continued until all traces of moisture disappear.

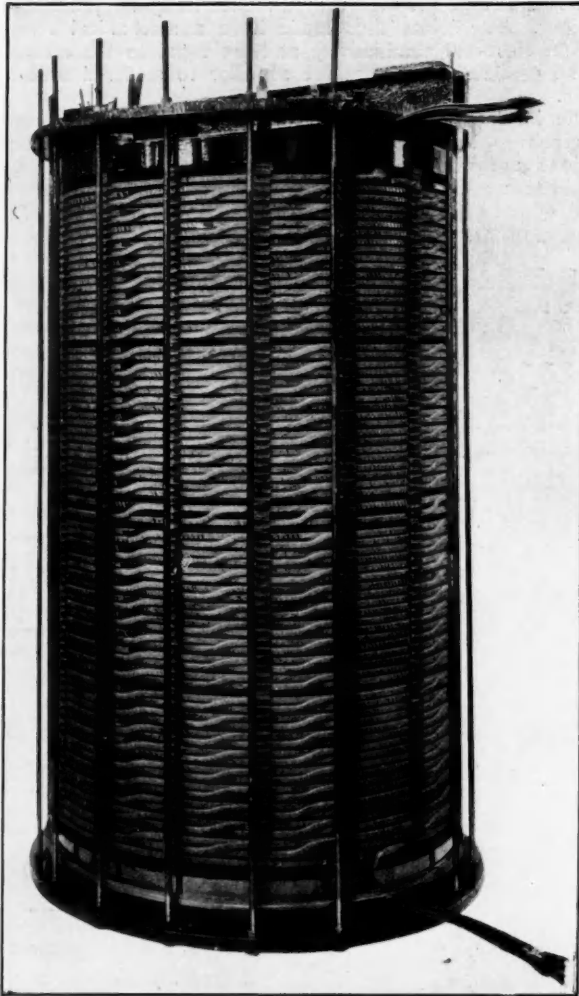


Fig. 1. High Voltage Winding.

The winding is then removed to the impregnating tank for either oil or varnish impregnation, according to the condition of service for which it is required. If varnish treatment is required the winding is placed in the varnish impregnating tank, where it is again subjected to a vacuum and, finally, a pressure of 100 lbs. per sq. in. is applied.

The coils are then removed from the impregnating tank and slowly baked in a special oven, through which there is a continuous forced circulation of dry air, thus ensuring complete oxidation of the varnish, making it impervious to the action of hot oil or moisture. At the conclusion of this process the coils are ready for assembly on the core.

The processes described are not worked on a time basis only; in every case inspection and tests positively ensure that each desired process is completed before the next is undertaken. All insulating material is carefully examined, tested and approved before use. Sheet insulation is passed through a high voltage testing machine and the entire surface is subjected to a test at an appropriate voltage. Should puncture occur the weak areas are cut out, or, if necessary, entire sheets or complete consignments are rejected.

Spacers between coils and windings are built up from such pre-tested material, individual thicknesses being cemented together hot in a special machine. Wood is not used for such purposes.

The core laminations are of the best non-ageing silicon steel cut from annealed sheets, a further annealing usually being given after cutting and piercing. They are then passed through a machine in which they are coated at a high temperature with a special oil-resisting varnish on both sides, this process giving a superior insulation to that of paper covering for laminations.

The laminations are assembled with interleaved joints and securely held in position between core plates by core clamping bolts, which have been previously covered with a special asbestos insulation moulded on at a high temperature under

heavy pressure in a 200-ton hydraulic press. This insulation presents a hard, smooth surface having exceptional mechanical properties and conforming to the specification for Class B insulation as defined by the International Electro-technical Commission. It has been found definitely superior to paper tubes for core bolt insulation. All bolts are tested to the core at 2,000 volts for one minute after assembly.

All structural steel is shot-blasted and cleaned before being built into the transformer, the shot blasting removing all scale and rust.

The type of core is determined by the class of transformer. For single-phase transformers the two-legged type may be used with both legs wound, or the three-legged type with the centre leg wound. A further type is now extensively used having a four part distributed return path with the centre leg wound.

Cores for three-phase transformers are usually of the three-legged type, but exceptionally large units may be built with five legs in one plane when limitations of transport make a reduction in height necessary.

There are two general classes of winding for core type transformers. In one the low voltage and high voltage windings are interleaved, and in the other they are concentric. In the concentric form the low voltage winding is assembled next to the core. The two windings are magnetically centred with respect to one another in order to reduce mechanical forces to the minimum.

Tank construction is an important part of the manufacturing process of oil-filled transformers, and stringent tests for soundness against the leakage of hot oil are always carried out.

Tanks for transformers of large capacity are provided with external detachable radiators, and have valves fitted in both the top and bottom connections of the tank, thereby enabling any of the radiators to be detached from the transformer when in service, see Fig. 2. These valves are characterised by having a large and unrestricted passage in the open position.

All tanks are reinforced where necessary to reduce the risk of injury by rough handling during transit and installation.

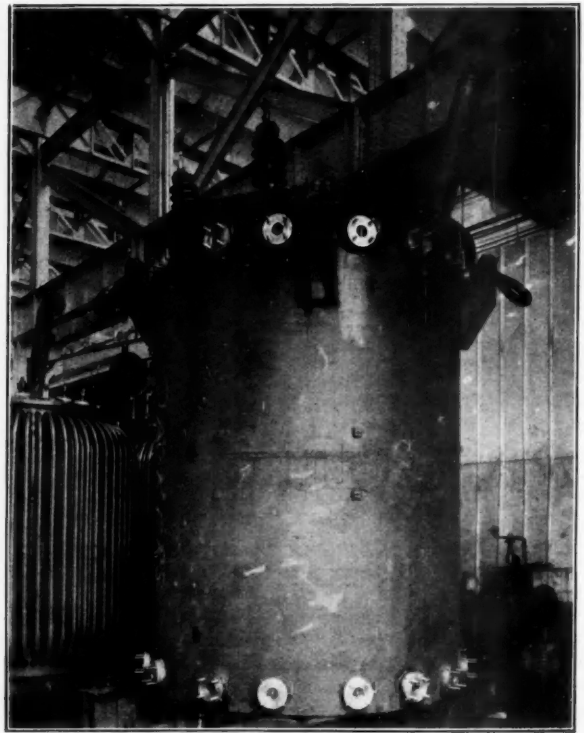


Fig. 2.

All "made" joints are provided with oil-resisting gaskets, which make an absolutely oil-tight joint, and all tanks are tested for oil-tightness before leaving the works.

After completion, all transformers are subjected to complete tests for losses, temperature rise, ratio, etc., and pressure tests in accordance with British Standard Specification No. 171.

*Launch of Passenger Tender.*

Messrs. Ferguson Brothers (Port-Glasgow), Limited, launched recently the powerful twin-screw passenger tender "Romsey," built to the order of the Alexandra Towing Co., Ltd., Liverpool. She is intended for passenger tender service at Southampton and is fitted with ample accommodation for a large number of passengers. Two large boilers are installed, fitted with Howden's Hot Air Forced Draught. Vessel's dimensions: 140-ft. by 34-ft. by 15-ft. 6-in.

## Notes from the North.

### New Bromborough Dock.

THE opening of Messrs. Lever Bros. new million pounds dock at Bromborough, which will give a big impetus to the industrial development of the Birkenhead side of the River Mersey, will take place this year. Work has already been in progress for over six years on the dock which will materially assist the firm's enterprises at Port Sunlight and Bromborough in the prompt and economic handling of their most important raw materials. The dock work covers 145 acres and has a river frontage of  $1\frac{1}{2}$  miles, the deep water area being eighteen acres with 2,400-ft. of quay length. The dock will accommodate sea-going vessels up to 10,000 tons for direct loading and unloading.

### Woman Harbourmaster.

Mrs. Jane Ellen Jones, Portdinallaen, near Pwllheli, who is ninety-four years of age, is the only harbourmaster of her sex in Wales. She is also the oldest licensee in the kingdom. In conversation with a pressman, Mrs. Jones produced the receipt book for harbour dues at Portdinallaen, stating that business was very slow at present. In olden times she remembered as many as forty sailing vessels in the harbour at the same time. *Ti Coch Inn*, of which she is the occupier, is situated on the shore and when it is high tide the sea is right up to the front door. On stormy nights it is her custom to try and help small craft by lighting oil lamps and placing them in the windows as a guide to the sailors to the harbour. One evening recently her light was instrumental in directing a ship which had broken loose from her anchor where she was loading stone at a quarry, safely into port.

### Dock Salvage Feat.

Salvage experts of the Mersey Docks and Harbour Board, on 2nd February, cleverly executed the difficult task of raising the grievously damaged steamer "Oklahoma," which was buckled by fire, from the bed of the Sandon Dock, Liverpool. They were confronted with two alternatives:—(1) temporarily repair the steamer so that she would float, or (2) break her up at the bottom of the dock. It was decided to adopt the former course, but in order to do this, Sandon Dock had to be drained. The task of making the bent and battered hull watertight and seaworthy for the "voyage" to Tranmere—three or four miles—was a big one, and necessitated the employment of a couple of hundred men day and night. The repair work completed, the huge caisson which had been employed for the purposes of emptying the dock was removed, and the water entered to the normal level. The crippled "Oklahoma" immediately rose to the surface from the bed of the dock and was towed to Tranmere. Captain F. W. Mace, marine surveyor to the Dock Board, and his assistants, Captain Hart and Commander Harboard, were on the "Oklahoma" during her uneventful crossing.

### £262,000 Harbour Scheme.

The lighthouse on the Red Pier, Douglas, Isle of Man, and the circular-shaped broad portion at the end of the pier are being demolished. This is part of the scheme of lengthening the Red Pier by 400-ft. and at the same time shortening the Fort Anne Jetty. The whole of the present Red Pier is built of red sandstone except where it has been repaired in the south side with limestone. It is 640-ft. long, 45-ft. wide along the main structure and 115-ft. at the head. The lighthouse was in constant use up to the time the more elaborate and modern lighthouse was built on Douglas Head, 1830-33, and was the only light to guide vessels into the harbour. It had a white, non-flashing light. The Red Pier was built to extend about 350-ft. further eastward than the old mole. It was soon found, after its erection, that it was advisable to protect the harbour from the run of the sea, which had become somewhat accelerated by the extension of the pier further eastward than the old mole. The protection thus required was provided for by the building of the small structure known as the Fort Anne Jetty. It was built of limestone obtained from Port St. Mary Point and has stood the strain and stress of heavy seas since 1833 with practically no expense for upkeep or repair. There are emergency boat landings on the jetty, but its main purpose is that of a breakwater.

It is of some interest to note the progress of the Douglas harbour developments from the time of the construction of the Red Pier. It was built into the sea and immediately showed the need for some protective work; hence the Fort Anne Jetty. Later the Victoria Pier was built, being formally opened in 1872. It was clearly realised at the time that protective works would be needed for that also and so the construction of the Battery Pier became part of the same scheme. In 1892, 400-ft. was added to the Victoria Pier. The Harbour Commissioners

made application in 1925 for outer works, but the proposal failed to carry owing to the cost, which was estimated at £750,000. The present Red Pier Scheme is an alternative scheme to that one and the cost is estimated at £262,000. The result of the extension of the Red Pier will be that there will be two deep-water berths and one half-tide berth. Naturally it will add to the amenities of the harbour, as the larger cargo vessels, which have difficulty in getting proper depth of water in the inner harbour, will now always have a discharging berth in the winter months.

### Quay Handling of Locomotives: Notable Performances.

To enable the shipment of fourteen locomotives and tenders for the North-West Railway of India a special railway has been laid at Gladstone Dock, Liverpool, owing to the engines having been built for a wider gauge than the existing permanent way at the dock. This is the first time that engines of this size have been brought complete to the quayside for despatch from Liverpool, and that explains the need for the special track. Hitherto it has been the practice to send new locomotives of this type by rail in sections to the docks—generally the West Float, Birkenhead—and there rebuild them before shipment. This time the experiment is being made of sending the engines complete by road to the dock. The locomotives, the first to be shipped from the Gladstone Dock, have been built by the Vulcan Foundry Ltd., who are at present under contract to supply thirty-nine to Indian railways. The first fourteen were shipped on the "Belpamela" and were brought to Gladstone dock at the rate of one per day. The transport of the locomotives from the works to Liverpool has been undertaken by M.R.S. Ltd., of Liverpool, who used a new type of petrol-engined vehicle known as a Mammoth machinery transporter capable of carrying 100 tons. Each locomotive and tender weighs eighty-two tons, but the tender was conveyed on a separate truck. By an ingenious arrangement of girder rails and detachable lorry wheels, it was possible for the locomotives to run on and off the wagon on their own wheels. On arrival at the dock the locomotives passed on to the special track which formed a siding to within ten feet of the edge of the quay where the vessel was berthed. Mr. E. C. Marston, of M.R.S. Ltd., explains that this transport innovation has excited considerable interest among other locomotive manufacturers. It would, therefore, appear that Liverpool as a port will have the advantage of most of the locomotive trade in future. The export of locomotives is a big trade. The output for export of one of the manufacturers is about 200 engines a year, but, hitherto, the locomotives have had to be dispatched to the port by rail in pieces and erected on the quay, as they are too large for English gauge rails. Liverpool has not been in a happy position as against Manchester because there is no fixed heavy crane on the Liverpool side. The locomotives have been dispatched to Birkenhead by rail for assembly and lifted aboard the steamer by the 87-ton crane, the floating crane being too expensive. The Dock Board then offered a site on the Liverpool side and selected Gladstone Dock. Broad gauge lines were laid so that the locomotives could be off-loaded and placed on the rails to go alongside the steamer. The Manchester Ship Canal were also approached and offered very good facilities.

A remarkable dock feat was carried out recently at Salford docks, consisting of the loading of a 121-ton electric locomotive aboard the steamship "Elysia." The locomotive is the first of a consignment of 21 now being constructed at Metropolitan Vickers Trafford Park works, and it is also the first to be shipped direct from the Salford Docks. After being rail-hauled to the ship's side, the locomotive was trussed with innumerable ropes and attached to a floating crane lying alongside the wharf. Inch by inch the giant locomotive was lifted clear of the wharf and, still suspended, was borne out into mid-stream by the floating crane. Hundreds of dock workers stood in open-eyed wonder as the crane nosed its way slowly through the docks with the locomotive slung many feet above its stout deck. Altogether nearly two hours were occupied in getting the locomotive safely stowed away on the specially strengthened deck of the "Elysia."

### Milford Haven Improvements.

Important dock improvement works have been put in hand at Milford Haven. Part of the scheme concerns the sidings for coal, and this work has already been commenced on the Priory Hill site, where room will thereby be provided for another 120 coal trucks. It is intended to erect an additional coal conveyor on the Halin side of the docks. One has been already erected and some idea of the capacity of this huge mechanical device can be gathered from the fact that coal can be shipped into the trawlers and other vessels at the rate of 200 tons



*Notes from the North—continued.*

per hour. The Fish Market is to be extended by 200-ft. at the western end. For a considerable time it has been clear that such an improvement was necessary by reason of the increased number of trawlers now based on the port. This work will mean the removal of a number of offices, shops and stores to a point at the rear of the building and will entail a great amount of labour. When completed the market will give more freedom for landing and packing fish, and several more trawlers can be berthed from which fish is landed direct into the market. It is expected that the work altogether will take from six to eight months to complete and about 100 men will be taken on in addition to the present staff. The trade of the port has increased to the extent of 22½ per cent. during the past twelve months. The work will be under the direction of Mr. J. C. Ward, M.I.C.E., the general manager and engineer of the Dock Company.

**Dock Authority and Sewage Problems.**

Mersey Docks and Harbour Board objected at the Ministry of Health inquiry at Hoylake, on 5th February, to the proposal of the Hoylake and West Kirby U.D.C. to spend £95,400 for works of sewerage and sewerage disposal. The Dock Board regarded it as dangerous to put crude sewage into the river. The sludge from Manchester and Salford sewage, they pointed out, had to be carried some seven and a half miles beyond the Bar. Mr. Frederick Wm. Bates, marine surveyor to the Dock Board, said that where they once dredged clean sand they now found a crust or sticky surface which the pipes of dredgers would not suck in. They had had the matter analysed and had found it was sewage deposit. It was vital for the channels of Liverpool Bay that they must go on improving them if they were to accommodate the increasing sizes of vessels. Since 1906 the capacity of the upper estuary had greatly decreased. Similar evidence was given by Mr. Thos. Norfolk, engineer-in-chief to the Dock Board. Capt. F. W. Mace, marine superintendent and water bailiff, described experiments with floats showing that the sewage matter eventually travelled in the direction of the Mersey. At present 20,000,000 tons of material were taken yearly from the Mersey channels. It was of great importance that the channels should be kept open. Unless they were continually deepened the port was going backward because of the increasing size of liners. Sea water had a high specific gravity and solids remained in suspension for a greater period than in ordinary water. Supposing the matter was deposited near the sewer outfall, it was broken by the westerly gales and driven towards the Mersey. They had had sea water analysed and it was shown to contain matter in suspension.

**Ferry Proposal Abandoned.**

The technical advisers of the Mersey Docks and Harbour Board have come to the conclusion that the scheme for the provision of ferry accommodation at Bootle Docks is impracticable. Bootle Council have approved the Finance Committee's resolution that the proposal should be abandoned.

**New Cranes for Langton Dock.**

Mersey Docks and Harbour Board has under consideration a recommendation of the Works Committee that at a cost of £13,540 the shed at the north side of the Langton Dock be modernised by provision of electric roof cranes, etc. The Board has decided to continue an arrangement whereby the cargo rate of 3s. 8½d. per ton is levied in respect of any portion of cargoes of wheat and corn discharged by the board at the Waterloo or Birkenhead grain warehouses, which may be collected by the Board's barges for conveyance from one of the warehouses to the other for storage.

**Port of Fleetwood.**

Mr. John Wood, Fleetwood dock superintendent, in his annual report, states that the quantity of fish dispatched by rail last year was more than 1,000 tons in excess of that for 1928. The total tonnage was about 68,000, being roughly 2,000 tons less than the record which was set up in 1927. Dealing with the general exports and import trade of Fleetwood, Mr. Wood indicates a slight increase. Exports consisted principally of chemicals and salt, and imports, timber, china, clay, phosphates and macadam. Mention is made of the inauguration by Coast Lines, Ltd., of a regular service of steamers from Fleetwood calling at Inverness, Stornoway, Aberdeen, Kirkcaldy, Dundee, and Leith.

**Dee Embankment Scheme.**

Further attention has been given by the Dee Conservancy Board to the scheme for a bridge and railway embankment across the estuary of the river Dee. A deputation from the Flintshire County Council which waited on the Board estimated that the scheme would cost altogether between £3,500,000 and £4,000,000. It was suggested that before the scheme was gone into minutely, they should ascertain to what extent the

Government and the Railway companies would support it. One member of the Board was of the opinion that a bridge at the mouth of the river would cause the river to silt up. In reply to a question, the clerk, Mr. C. P. Smith, said the scheme was prepared by Messrs. Wilton and Bell, engineers, Victoria Street, London. The County Council and local authorities would have to promote the scheme if it reached Parliament. The chairman said he thought it would be better for them to wait until they heard something further about the scheme before they took any steps. Further consideration of the scheme was deferred. Mr. A. H. Tilby, who put forward the Flintshire County Council's views, said the Cheshire County Council had said all along that they were not prepared to go into a navigation scheme pure and simple, but the idea of an embankment was an entirely different proposition, and they might be invited to come in. The scheme undertook to put a railway across the embankment and he took it that the railway would have to be worked by some railway company. Therefore, before they went any further, they ought to find out, first of all, what support a Government department would give to an approved scheme. If the Government department indicated that they were prepared to give a substantial sum, they would want an approved scheme, approved probably by their technical advisers. Capt. John Hughes said that at present they had two inlets for the tide, one along the Welsh coast and another up the Swash. The embankment proposed to close the Welsh Channel and provide only a single channel. When there was a strong tide one channel would be quite inadequate and would be dangerous to navigation.

**Preston Viaduct Contract.**

The L.M.S. Railway Co. is to commence work immediately upon the reconstruction of the Ribble Viaduct at Preston. The contract, stated to involve a sum of between £20,000 and £25,000, has been placed with the firm of Sir Wm. Arrol and Co., Ltd., of Glasgow, the constructors of the new Wearmouth Bridge, Sunderland.

**Completion of Princes Dock.**

The two southernmost sections of the new shed at the east side of the Princes Dock, Liverpool, have been finished and handed over to the Coast Lines. The Mersey Dock Board engineer expects that the rest of the shed will be finished within a short time. This contract will then be completed.

**Lightship Ashore.**

An attempt was made on 13th February to refloat the Mersey lightship "Alpha," which went ashore at the south end of Walney Island at the entrance to Barrow Channel during a gale in December. The effort was made by a powerful tug belonging to the Mersey Docks and Harbour Board, but was not successful, and the "Alpha" remains ashore. Further efforts will be made to refloat the lightship.

**Most Modern Plant in Europe.**

Mr. Edward Paul, speaking at the forty-seventh annual meeting of the Liverpool Grain Storage and Transit Co., Ltd., said the new grain discharging plant, now completed, was one of the best installations on the Mersey Dock Board Estate, and he questioned very much if its equal was to be found in Europe. The company had decided to make a rebate to customers of sixpence per ton in respect of any cargoes or parcels discharged by the new plant.

**Connah's Quay Wharves Saved.**

Opposition to the proposal of the L.N.E. Railway Company to close the Connah's Quay Docks is developing in the Deeside area. At a meeting of the Chester and North Wales Chamber of Commerce, Mr. T. Waterhouse, J.P., the chairman, said the maintenance of the waterways and dock facilities on Deeside had been a difficult matter for many years. Traders had had, on previous occasions, to fight for their right of access to the docks, and the Railway Company's Bill was being introduced at a time when the navigation of the river was being improved. He considered it a most inopportune moment to close the only sea outlet between Chester and Mostyn. In the interests of the traders of Flintshire and Denbighshire the petition of the Connah's Quay Council should receive support. It seemed to him a very unwise step to take away from the Deeside those dockyard facilities which could be very much improved and be made of real advantage to the traders of the district. It was further stated that the dock received trade from Buckley, Denbighshire, Staffordshire, and various Midland counties. During the time the railway was owned by the Wrexham, Mold, and Connah's Quay Railway Company, the port enjoyed a very prominent position and quite a number of vessels from 300 to 800 tons were to be seen discharging or waiting to discharge their cargo at the port. The ships carried ore, grain, phosphates, etc. The railway passed into the hands of the Great Central Railway about 1905 and up to

Notes from the North— continued.

1911 the trade was quite good. Immediately the Wrexham, Mold, Connah's Quay line went out of business, and the Great Central Railway took possession, the port was allowed to deteriorate, and whereas there were previously eight hand cranes and five steam cranes in use there were now only two steam cranes. These were inadequate for modern tonnage requirements and the tonnage now was very small. The tonnage in 1910 was 58,281 tons; in 1911, 49,816 tons; and in 1928, 11,067 tons. A report was issued on the condition of the dock, but since then the navigation of the river had been improved. If the port was put in a better state of repair, it was held there was a future for it.

To consider what action should be taken with regard to the Bill to be promoted in Parliament by the London and North Eastern Railway Co., a clause of which provides for the closing of the railway wharves at Connah's Quay, Dee Conservancy Board has held a special meeting. The Board has decided to petition against the Bill in conjunction with the Flintshire County Council, unless satisfactory terms can be arrived at before the time expired for petitioning against the Bill.

As the result of the vigorous objections to the closing by the railway company of the docks and wharves at Connah's Quay, it seems likely that some concession will be made to local opinion. While the company will proceed with their Parliamentary Bill, they are understood to be disposed to keep the wharves in a reasonable state of repair, thus giving facilities at Connah's Quay for loading and unloading at the docks. The fact that the wharves are not to be abandoned will give Connah's Quay an opportunity of recapturing some of its old-time prosperity, if and when the Dee navigation is improved.

High Interest Charges.

At a recent meeting of the Liverpool Chamber of Commerce, the transport committee drew attention to the fact that the evidence given on behalf of the dock authorities at the Royal Commission on Transport confirmed the opinion that, if the Dock Board could get relief from high interest charges, it would probably lead to reduced port charges. Mr. R. V. Edwards (chairman of the Transport Committee) said the committee discussed that subject two or three months ago, and came to the conclusion that if the Government could see their way to make some contribution towards the enormous amount of interest which the Dock Board paid—which amounted to one million five hundred and odd thousand pounds—it would be a great saving to the port charges of Liverpool.

River Dee Navigation.

Mr. Caradoc Williams, in his annual report to the River Dee Conservancy Board, stated that the average condition of the navigation with regard to the depth had been six inches more than the average condition for 1928. The low water channel below Connah's Quay had followed the northern training wall since March, 1925, and continued on the same line for about a quarter of a mile before turning northward. The northern training wall above the gap had been maintained in good condition and during the year 25 tons of stone had been used on it. The extension of the high training bank had been continued and the total length at the end of December was 2,511 yards, and the improved condition of the navigation had been maintained by reason of that extension. During the year 132 tons of stone had been deposited along the face of the northern embankment at several places between the Higher Ferry and the Hawarden Bridge. Further work on that embankment was in progress.

Clarence Dock Power Station.

Consideration has been given by the Clarence Dock Special Committee of the Liverpool Electric Power and Lighting Committee to the amount of plant required in the new Riverside Power Station and they have decided to make application to the Commissioners for sanction to put down a second 50,000 k.w. turbo alternator, switchgear and auxiliary plant. The estimated expenditure is:—new 50,000 k.w. turbo alternator and accessories, £187,870; steam pipes, £2,000; switchgear, £9,800; foundation block, £6,500.

The contract for the supply and erection of the auxiliary switchgear at the Clarence Dock Power Station, to line up with and form part of the main switchgear, forms the subject of a recommendation by the Clarence Dock Special Committee of the City Council. They propose that the contract be offered to the British Thomson-Houston Co. Ltd., Rugby, at a pro rata price to the value of the contract for the main switchgear and at an estimated cost of £9,800.

Mersey Tunnel Progress.

Mersey Tunnel Joint Committee has awarded a contract amounting to £246,000 for the deck roadway of reinforced concrete to Messrs. Edmund Nuttall and Sons, Ltd. The roadway will divide the two levels of the tunnel, and the

contract covers the length from one bank of the river to the other. The engineers reported that 83.5 per cent. of the excavation under the river to full diameter has been done and that 77.1 per cent. of the cast iron lining is in place, this being 12.8 per cent. ahead of schedule. The whole of the upper half of the lining is in place. On contract No. 3 for the construction of the full-sized tunnels on the Birkenhead side, the estimated value of the work to date is £231,500 or 30.9 per cent. of the total. Tunnel work underground is proceeding at ten points. The volume of excavation done to date is 78,720 cubic yards, or 42.5 per cent. of the total 185,000 cubic yards in the contract. The number of men employed is about 550. On Contract No. 4, comprising the construction of the full-sized tunnels on the Liverpool side, the estimated value of the work to date is £178,600, or 26.6 per cent. of the total. The tunnelling shield which will be used to drive the tunnel under Dale-street has been started. Demolition is in progress at Old Haymarket and at the New Quay site. Underground the tunnel work is proceeding at eight faces. The volume of excavation to date is 64,000 cubic yards or 37.3 per cent. of the total. The number of men employed is about 320.

Lever Bros. New Dock.

Lever Bros. Ltd. are promoting a Bill in Parliament to extend the period for the completion of Bromborough Docks. Mr. F. D'Arcy Cooper, who presided at a recent meeting of the company at which this authority was granted, explained that owing to the failure of contractors the construction of Bromborough Dock had been held up, and though they believed that with their own engineers they would be able to complete the work by next October—the scheduled time—it was thought desirable to be on the safe side.

Additional Cranes for the L.N.E.R.

Messrs. Stothert and Pitt, Ltd., of Bath, have recently received orders from the London and North Eastern Railway Company for 19 electric dockside gantry cranes, arranged on the firm's well-known patent crank-operated horizontal-jib luffing system, 17 cranes being for Harwich (Parkestone Quay), and two for London (Thames Ironworks Wharf, West Ham).

The Harwich installation comprises five 5-ton and twelve 1½-ton cranes, the maximum radius being 45-ft., and the track rail centres 9-ft. 10-in. The larger cranes will have change gear to enable light loads up to 1½-tons to be lifted at 400-ft. per minute.

The London cranes have a lifting capacity of 3-tons at 60-ft. radius, with change gear for loads up to 1½-tons at 70-ft. maximum radius, and travel on a 15-ft. track.

In the case of both installations, separate motors are provided for the respective motions of hoisting, slewing, luffing and travelling, and the revolving superstructures slew on a live ring of steel rollers.

Rates of Exchange for Port Dues in Yugoslavia.

The Department of Overseas Trade has received from the Commercial Secretary, His Majesty's Legation, Belgrade, the following official rates of exchange for the payment of port dues in Yugoslavia during February, 1930, which appeared in the "Official Gazette" of January 29th:—

	Dinars
1 Gold Napoleon ...	218-00
1 Gold Turkish Lira ...	247-00
1 Pound Sterling ...	276-00
1 American Dollar ...	56-60
1 Canadian Dollar ...	56-30
1 Gold German Mark ...	13-55
1 Polish Zloty ...	6-34
1 Austrian Shilling ...	7-97
1 Belga ...	7-88
1 Pengo ...	9-90
1 Brazilian Milreis ...	6-75
1 Egyptian Pound ...	283-00
1 Turkish Paper Lira ...	26-60
100 Turkish Paper Piastres ...	26-60
100 Gold Francs ...	1095-80
100 French Francs ...	222-50
100 Swiss Francs ...	1095-80
100 Italian Lire ...	296-80
100 Dutch Florins ...	2274-00
100 Roumanian Leis ...	33-70
100 Bulgarian Levas ...	40-80
100 Danish Crowns ...	1513-00
100 Swedish Crowns ...	1518-50
100 Norwegian Crowns ...	1512-00
100 Pesetas ...	732-00
100 Greek Drachmas ...	73-45
100 Czechoslovak Crowns ...	167-70
100 Finnish Crowns ...	142-00
100 Latvian Lat ...	1087-00

Personal enquiries regarding shipping and transport matters should be made at the City Office of the Department (Shipping and Transport Section), 73, Basinghall Street, London, E.C.2.



## Notes of the Month.

### Final Dividend of Vickers, Ltd., for half-year ended Dec. 31st, 1929.

The Directors give notice that the following Final Dividends for the half year ended 31st December, 1929, will be paid to the holders of the Preferred Stock and Preference Shares of the Company who are registered in the books of the Company on Saturday, the 8th day of March, 1930:— $2\frac{1}{2}$  per cent. on the Preferred 5 per cent. Stock (less Income Tax),  $2\frac{1}{2}$  per cent. on the 5 per cent. Preference Shares (less Income Tax),  $2\frac{1}{2}$  per cent. on the Cumulative Preference Shares (free of Income Tax).

Payment will be made on Friday, the 4th day of April, 1930.

The Transfer Books of the Company relating to these issues will be closed from Monday, the 10th day of March, to Saturday, the 15th day of March, 1930, inclusive.

### Bremen's Sea Traffic during January, 1930.

Bremen sea-vessel traffic decreased slightly in January, 1930. 787,920 net registered tons arrived, against 796,862 net registered tons in December, 1929, and 793,920 net registered tons in January, 1929.

Seaborne goods traffic of the five most important Weser ports was naturally much behind the figures of the previous month owing to the coming into force of the new increase in the tariff for grain. Imports and exports together amounted to 606,500 tons, as compared with 720,600 tons, or 16 per cent. less. However, the decrease was only in imports, which with 414,900 tons were only about three-quarters of the previous month. Besides grain, cotton and timber also decreased. Coal and oil-seeds also fell. Exports increased; they rose from 165,400 tons to 191,600, or by 16 per cent.

### St. Lawrence Ship Channel.

According to the "Shipping Register" (Montreal) of January 18th, work is to be expedited during the coming season on the dredging of the ship channel between the port of Montreal and the Gulf of St. Lawrence. Two powerful elevator dredges and a new hopper barge are to be added to the fleet of vessels operating on the river. A total of 18,578,000 cubic yards have yet to be removed before a navigation depth of 35-ft. is provided between the sea and Montreal at low water, and this work is expected to occupy another six years.

Between Quebec and Montreal there were 1,450,465 cubic yards of material removed from Longueuil Shoal, Forsyth Shoal, Longue Pointe Curve, Cap St. Michel-Varenes Curve, Yamachiche Bend, in Lake St. Peter; Port St. Francis, Bécancour Lower Traverse, Champlain Upper Course, Champlain Curve, Champlain Lower Course, Cap Charles Channel and St. Croix Traverse.

Another 118,890 cubic yards were taken from this section of the river at Cap à la Roche, where the channel was widened and cleaned up. Considerable work was performed on the 35-ft. project in the new North Channel below Quebec, 1,267,300 cubic yards of material having been removed from Madame Reef Shoal and West Sand. A 25-ft. channel was completed in the St. Lawrence River in 1882, and six years later it was deepened to 27½-ft. In 1899 it was decided to deepen the ship channel to 30-ft., and the work was not completed until 1907, eight years later. Another three years saw the commencement of operations to provide for a depth of 35-ft., work being carried on steadily ever since 1910 on this project. During the seven months from May to November, equipment of the Marine Department removed 2,836,655 cubic yards of material by dredging, which brings the total taken out of the St. Lawrence Ship Channel to 55,357,596 cubic yards.

### Bombay Port Trust.

At a meeting of the Trustees of the Port of Bombay held on 28th January, 1930, the following were the main items of business disposed of:—

A Government Notification appointing Brigadier E. M. S. Charles, C.M.G., D.S.O., a member of the Board of Trustees was recorded.

Tenders from British and Indian Firms for the supply of rails and fishplates for renewals on the B.P.T. Railway were considered and the lowest tender, that of the Tata Iron and Steel Co., Ltd., was accepted.

In view of the continuous expansion in volume of importations of bulk petrol and in pursuance of the Trustees' undertaking to sanction progressive reductions in the wharfrage on this commodity, in proportion to the increased receipts, until a normal rate of wharfrage is applicable, it was decided, subject to the sanction of Government to the necessary amendment of the Bunders Scale of Rates, to reduce the wharfrage rate from 9 pies to 6 pies per gallon with effect from 1st April, 1930.

Since the opening of the Pir Pao bulk oil pier in 1922 the imports of bulk petrol have risen from 4 million to some 18

million gallons and the estimate for next year is 24 million gallons. Including the present reduction wharfrage has been progressively reduced from 18 pies to 6 pies per gallon.

Consequent on a reduction in the dredging operations, necessitating the lay-up of certain vessels of the dredging fleet, the Board sanctioned a revision of the scheduled staff to correspond with the reduced number of vessels in commission. It was further decided to dispose forthwith of one dredger and three hopper barges which are surplus to requirements.

### Kiel Canal Traffic in January, 1930.

A report received by the Department of Overseas Trade from His Majesty's Consul-General at Hamburg states that there was a further decrease in the volume of traffic during the month of January, 3,794 vessels, aggregating 1,690,216 net registered tons, passing through the canal, as against 4,338 vessels, aggregating 2,045,024 net registered tons, during the preceding month, but compared with January, 1929, there was an increase of approximately 34.26 per cent. The average tonnage of ships was 445 net registered tons, as against 471 net registered tons during the preceding month. Steamers and motor vessels represented 92.61 per cent. of the total traffic, and vessels with cargo accounted for 78.76 per cent.

Of the 3,794 vessels 2,135 were registered as seagoing steamers, aggregating 1,555,944 net registered tons, and of these 1,904 were cargo and passenger steamers of 1,544,697 net registered tons, 151 tugs of 5,380 net registered tons, and 80 fishing steamers of 5,887 net registered tons. There were also 1,423 sailing craft, aggregating 78,307 net registered tons, 166 lighters and barges of 45,694 net registered tons, and 70 naval, service, and pleasure vessels of 10,251 net registered tons. The vessels were loaded as follows:—Two with passengers, 217 with coal, 31 with cattle, 39 with stone, 51 with iron, 238 with timber, 499 with grain, 54 with ore, 569 with goods in bulk, 988 with piece goods, 104 general cargo, and 1,002 empty or in ballast.

Personal enquiries regarding all shipping and transport matters should be made at the City Office of the Department (Shipping and Transport Section), 73, Basinghall Street, London, E.C.2.

### Petrol-Electric Mobile Cranes.

The accompanying illustration depicts one of Messrs. Ransomes and Rapier's 3½-ton petrol-electric mobile cranes at work in Kingsway, London, on the contract for the heightening



3½-Ton Ransomes and Rapier Electric Mobile Crane. Operating in Kingsway, London, in heightening the L.C.C. Tramway Tunnel.

of the L.C.C. tramway tunnel, and shows one of the many uses to which this crane can be adapted.

### Corrigenda.

In the February, 1930, issue of *The Dock and Harbour Authority* there appeared on page 119, under "Irish Harbour Matters," a sub-heading "New Wharf for Waterford," stating that Messrs. Tilbury Contracting and Dredging Co. were the contractors for the new wharf. This is incorrect, as this firm had nothing whatever to do with this particular work, as their contract was for the deepening of the grain berth in the port, which has been completed, and this firm have now been given another contract for the deepening of the Ford Channel.



# Port of Southampton Topics.

## Several Records Broken.

THE official statistics for the port of Southampton for 1929 issued by the Southern Railway Company confirm the forecast given last month that under eleven of the twelve headings previous records have been broken. The one heading which shows a drop is inward cargo, which fell from 671,406 tons in 1928 to 610,573 tons. This decline in inward cargo outweighed the outward advance and left a deficiency of 49,014 tons.

The breaking of all the other records leaves no doubt that for Southampton the barometer is "set fair," and with the many schemes of development going ahead there seems every reason to suppose that the 1929 figures will not stand unchallenged long.

## Monthly Figures still showing Increases.

Southampton has started the New Year auspiciously. The January figures issued by the Southern Railway show considerable increases as compared with those for the corresponding month last year. The number of vessels using the port rose from 233 to 246 inward and from 234 to 259 outward. The tonnage jumped from 856,341 gross inward to 947,686, and outward from 951,482 to 1,078,341, an increase of 91,285 tons inward and of 126,859 tons outward. The net tonnage showed an advance of 49,578 inward and 76,703 outward, the respective sets of figures being 511,209 against 461,631 inward and 589,597 as compared with 512,994 outward.

During the month the passenger business showed a slight increase in the inward from 5,263 to 5,285, and in the outward from 10,970 to 11,160. Troops disembarked at Southampton during January numbered 3,049. There was an aggregate deficiency in the amount of cargo handled, for, while the outward total rose by 2,735 tons, the inward fell by 5,984 tons. The figures were: Inward 42,101, as compared with 48,085 in January, 1929; and outward 48,718, as against 45,981.

## Comparison of Traffic and Passenger Figures for past 11 years.

The fact that new records are established each year at Southampton Docks is now well known, but the extent of the increase in traffic is not so easily appreciated. The following figures show the inward tonnage, inward and outward cargo, and inward and outward passenger totals for the period from 1919 to 1929, and the percentage increase or decrease over the previous year is shown in each case:—

### TONS OF SHIPPING (GROSS).

(Inward.)

			Percentage increase or decrease over previous years.
1919	...	7,404,150	...
1920	...	7,226,872	— 2.0
1921	...	7,744,844	+ 7.0
1922	...	10,793,491	+39.0
1923	...	13,026,061	+20.6
1924	...	12,935,001	— .69
1925	...	13,071,266	+ 1.1
1926	...	14,595,166	+11.7
1927	...	15,367,825	+ 5.3
1928	...	16,459,997	+ 7.1
1929	...	17,246,592	+ 4.8

Per cent. increase, 1929, compared with 1919—132.9.

### CARGO—IMPORT AND EXPORT.

			Percentage increase or decrease over previous years.
1919	...	362,416	...
1920	...	794,722	+119.28
1921	...	690,414	— 13.12
1922	...	763,603	+ 10.6
1923	...	1,009,876	+ 32.3
1924	...	1,073,043	+ 6.3
1925	...	1,123,313	+ 4.7
1926	...	1,160,003	+ 3.3
1927	...	1,185,970	+ 2.2
1928	...	1,246,752	+ 5.1
1929	...	1,197,738	— 3.9

Per cent. increase, 1929, compared with 1919—230.48.

### PASSENGERS—INWARD AND OUTWARD.

			Percentage increase or decrease over previous years.
1919	...	216,752	...
1920	...	417,121	+92.4
1921	...	346,374	—16.9
1922	...	356,110	+ 2.8
1923	...	414,090	+16.3
1924	...	431,928	+ 4.3
1925	...	446,221	+ 3.3
1926	...	449,058	+ .6
1927	...	481,362	+ 7.2
1928	...	504,637	+ 4.8
1929	...	537,425	+ 6.5

Per cent. increase, 1929, compared with 1919—147.9.

## Increase in use of Dry Docks by Foreign Vessels.

The increasing use of the drydocking facilities at Southampton by foreign vessels is a gratifying feature of port activities. This month two French liners have been here for drydocking and overhaul, the reason for the work not being carried out in France being that the drydocking accommodation in that country is at the present time fully taxed. The first of the two liners arrived about the middle of the month, the "Lutetia" (14,783 tons), owned by the Compagnie de Navigation Sud Atlantique, and on her arrival from Bordeaux, Messrs. Harland and Wolff immediately began work on her. She remained dry for ten days, and during that time a considerable amount of work was done to her hull and propellers. The "Lutetia" was followed by the same Company's "Massilia" (15,147 tons), and a good deal of work was done to her before she returned to her terminal port, Bordeaux. Both liners are engaged on the service from Bordeaux to South American ports.

The presence of the "Lutetia" and "Massilia" at Southampton established a new record at the port, for within a period of six weeks three large French passenger liners have been seen here, the other being the "France," of the Compagnie Generale Transatlantique. These French liners are not the only foreign passenger vessels to drydock at Southampton this winter, for the North German Lloyd liner "Bremen" was here for a few days towards the end of the year. The Red Star liner "Belgenland," the largest vessel flying the Belgian flag, was also here before leaving on her world cruise, as were the "Lapland" and the "Arabic."

## New Service to be Opened.

It was announced recently that the East Asiatic Company, which has lately developed its passenger service on the Bangkok line from Southampton, had decided to make a new departure. It had been arranged that the new ship "America" would inaugurate a service from Southampton to the North Pacific, but an alteration in the sailing list necessitates the postponement of this trip. The new service, however, will be opened on May 1st, when the "America" will make the voyage. The Company's passenger service between Europe and the North Pacific is at present a monthly one, and the vessels proceed via St. Thomas and the Panama Canal. If sufficient inducement offers for a homeward call to be made in England, the vessels will use Southampton homeward as well as outward. The Company owns about 20 motor ships, and half of them are of 10,000 tons or over. The Bangkok Line, which is establishing a regular connection with Southampton, is maintained by seven vessels, with excellent accommodation for a limited number of passengers.

After a lapse of many years a Blue Funnel liner is again calling at Southampton, the "Ascanius" having called this month from South Africa to land 120 passengers as well as a considerable consignment of fruit. It was the first occasion on which a vessel of this well-known line has been seen at Southampton since the war.

## Royal Netherland Co's. Liner calls at Southampton.

An interesting visitor to the port this month has been the Royal Netherland Steam Navigation Company's liner "Prins Frederik Hendrik." It is the first time that a vessel of this line has called at Southampton, and, as Plymouth is the usual British port of call, it is regarded as a significant move that the "Prins Frederik Hendrik" was ordered to Southampton to land passengers and mails. The Royal Netherland Company is interested in a considerable number of trade routes, the "Hendrik" being on one of the services to and from the West Indies and South Pacific ports.

## Cunard Line secures another Record.

The Cunard Line secured another record last year by carrying more passengers across the North Atlantic than any other steamship line for the sixth year in succession. Southampton is particularly interested in the matter, because it is the home port of the Cunard "big three," "Aquitania," "Berengaria," and "Mauretania," which carried more first-class passengers than any other three steamers of any other line. The total number of passengers carried was 202,185, and over 41,000 passengers travelled tourist third cabin. During the year there were 361 sailings and the ships steamed over a million miles.

## Southampton Master Mariners' Club.

Southampton Master Mariners' Club, which is not yet two years old, is making great strides and has already attracted to membership 384 master mariners with a valid foreign-going master's certificate. New members continue to be enrolled

Port of Southampton Topics—continued.

and at last week's meeting ten additional names were passed by the committee.

Captain J. G. Saunders, O.B.E., R.D., R.N.R., Assistant Marine Superintendent, Cunard Line, Southampton, has been elected "Captain" (or Chairman) for the ensuing year, with Captain A. H. Raymer, R.D., R.N.R., Senior Nautical Surveyor to the Board of Trade at Southampton, and Captain J. W. Williams, D.S.O., R.D., R.N.R., Marine Superintendent of the White Star Line, Southampton, as "Staff Captains."

At the annual banquet of the Club, on February 13th, Admiral Sir Roger Keyes, K.C.B., K.C.V.O., C.M.G., D.S.O., Commander-in-Chief at Portsmouth, was the guest of honour, and he was invested with the silver whale to mark his election as the Club's third "Stowaway," the others being the Bishop of Winchester and Earl Jellicoe. Other guests at the banquet were the Mayor of Southampton, Captain Sir Burton Chadwick, M.P., R.N.R. (Deputy Master of the Honourable Company of Master Mariners), Vice-Admiral G. R. Mansell, C.B.E., M.V.O. (Deputy Master of Trinity House), Mr. Robertson F. Gibb (General Manager and Director, Union-Castle Line), Mr. P. G. Mitchell (General Manager and Director, R.M.S.P. Co.), and Lieut-Colonel Gilbert S. Szlumper (Assistant-General Manager, Southern Railway Company). In the course of his reply to the toast of "The Merchant Navy and Kindred Services," Sir Roger Keyes said that ocean-going seamen were wanted in the Royal Naval Reserve. It was very important to have a fine body of seamen lining up behind the Navy. The maintenance of our sea communications was absolutely vital to every soul in the Empire and, above all, to the people of these islands. The sailormen to whom the torch of the glorious past had been handed would see to it that the British Mercantile

Marine should never be anything but paramount, and they must see that the Royal Navy and its Reserve, if reduced in quantity, should remain second to none in quality.

Mercantile Marine Service Association.

Southampton members of the Mercantile Marine Service Association have been discussing a number of important subjects affecting the prospects and position of masters and navigating officers holding Board of Trade certificates. One of the most serious of these matters is the increase in the number of unemployed members, attributed to the shipping slump, which it is hoped is more seasonal than permanent. The fact is apparent from the figures given that there is a larger number of ships out than for several years past. Considerable satisfaction has been expressed by the Association at the smooth running of the National Maritime Board agreement to increase the number of three watch vessels, which had proved so beneficial to junior officers, more than 500 of whom are now employed under the new arrangement. The proposal to found a sailing ship for training purposes does not receive general support, both on account of the cost and its doubtful value.

Obituary.

The death has occurred of Mr. John Wilson, Commander R.N.R., Senior First Officer of the Cunard liner "Aquitania." He came ashore fit when the liner arrived at Southampton on February 14th, but became unwell the next day and was removed to a Southampton nursing home, where he died. Mr. Wilson, who had been with the Cunard Line since 1912 and had served on the "Aquitania" for six years, was a popular member of the Southampton Master Mariners' Club.

The Port of London Authority.

1929—London's Record Shipping Year.

Additional shipping to the extent of 2,090,984 net reg. tons used the Port of London during 1929, the traffic being greater than in any previous year. The total was 57,540,136 net reg. tons compared with 55,449,152 net reg. tons for 1928, the previous record year.

The Board of Trade statistics for shipping that arrived at and departed from the various ports of the United Kingdom with cargoes and in ballast during 1929 compared with 1928 are as follows:—

Port.	Tonnage of Vessels with Cargoes and in Ballast.		
	1928. Net Reg. Tons.	1929. Net Reg. Tons.	Increase. Net Reg. Tons.
London	55,449,152	57,540,136	2,090,984.
Liverpool	33,118,061	34,851,572	1,733,511
Manchester	8,063,505	8,400,598	337,093
Hull	11,418,419	12,016,146	597,727
Bristol	6,616,737	7,033,046	416,309
Southampton	24,253,985	25,073,822	819,837
Other ports	201,443,028	217,205,157	15,762,129
Total	340,362,887	362,120,477	21,757,590

London's increase of 2,090,984 net reg. tons represents 9.6 per cent. of the total 1929 increase for the whole of the ports of the United Kingdom.

So far as London is concerned, a large proportion of the increased tonnage of shipping is in respect of the Dominions and Colonies.

Certain statistics of the trade of the Port of London for the year 1929 are now available, viz.:—

	Imports.	
	1928. Tons.	1929. Tons.
Fruit—Dried	111,963	120,721
Green and Vegetables	568,706	577,153
Meat—Chilled	316,436	311,209
Frozen	299,703	297,498
Paper	341,045	344,261
Provisions—Canned Goods	219,074	236,055
Cheese	105,603	109,276
Sugar—Beet and Cane	908,744	918,916
Tea	212,220	232,526
Wood—Hard and Soft	1,811,930	2,138,743

Port of London Elections.

The next triennial election of members of the Port of London Authority takes place in March, 1931, and the register of voters is now in course of preparation. Of the 28 members constituting the Port of London Authority, 16 are elected by users of the port whose voting power depends entirely upon the amount paid to the Port of London Authority in respect of port rates on goods, river tonnage dues, dock dues, dock and warehouse charges, etc.

Individual shipowners and merchants can ensure for themselves representation in the administration of their port by using as far as possible the docks and warehouses and general facilities provided by the Port of London Authority.

Port of London Traffic.

During the week ended January 31st, 1,289 vessels, representing 952,479 net register tons, arrived at and departed from the Port of London. Of these 519 vessels (720,673 net register tons) were from and to foreign ports and 770 vessels (231,806 net register tons) were engaged in the coastwise trade.

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During the week ended 7th February, 1,200 vessels, representing 917,239 net registered tons, arrived at and departed from the Port of London. Of these 543 vessels (705,490 net registered tons) were to and from foreign ports and 657 vessels (211,749 net registered tons) were engaged in coastwise traffic.

The tobacco stocks held by the Port of London Authority at the Royal Victoria and Albert and King George V. Docks have increased by nearly 1,500 tons during the past month and a record quantity is in store at the present time.

The stock is approximately 49,800 tons and is worth, including duty, about £62,265,000.

During the week ended 14th February, 866 vessels, representing 850,082 net register tons, used the Port of London. Of these 490 (467,032 net register tons) arrived from or left for foreign ports and 376 vessels (179,050 net register tons) were engaged in coastwise trade.

During the week ended 21st February, 1,070 vessels, representing 1,046,459 net register tons, arrived at or departed from the Port of London. Of these, 592 vessels (835,463 net register tons) were to or from foreign ports and 478 vessels (210,996 net register tons) were engaged in the coastwise traffic.

During the week in question five vessels from Australia, the "Cambridge," "Norfolk," "Ascanius," "Tongariro" and "Bendigo," and two from South America, the "Upwey Grange" and "Napier Star," brought 289,589 carcasses of lamp and mutton, 77,738 quarters of beef, 1,425 carcasses of pork, and over 24,000 packages of sundries.

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A record stock of softwood is on hand at the Surrey Commercial Docks, the centre of the London and Provincial Timber Trade. During the past 10 months over 10,000 tons more has been landed than during any previous similar period and the stock is now 370,133 tons. This figure has only once previously been approached, in January, 1928, when there were 358,443 tons of softwood on hand.

Italian Harbour Affairs.

FULL statistics regarding trade at Italian ports have not been published as yet, but an idea can be had about the development of shipping during 1929 at the various Italian ports through the examination of the figures concerning the month of December. According to these figures shipping during December included 27,686 ships arrived and cleared representing 12,269,699 net registered tons carrying 2,897,738 tons of goods and 560,093 passengers against 28,807 ships, 11,994,187 net registered tons, 3,267,710 tons of goods and 591,554 passengers for December, 1928. It can be seen that shipping during the month of December, 1929, has shown a decrease in respect to shipping during the corresponding period of 1928, but this fact is not sufficient to say that shipping at Italian ports has shown a decrease during the 12 months of 1929. Detailed statistics have not been published as yet, but the figures on hand enable the following schedule to be produced, regarding goods unloaded and loaded at Italian ports:—

1929	Tons.
January	2,710,000
February	2,541,000
March	3,131,000
April	3,310,000
May	3,382,000
June	3,185,000
July	3,298,000
August	3,128,000
September	3,007,000
October	2,928,000
November	2,955,935
December	2,897,738

Total	Tons of Goods Unloaded and Loaded.
1929	36,773,673
1928	35,161,701
1927	33,438,757

From these figures it appears quite clear that shipping has been fluctuating from month to month during the whole year, but the total shipping during 1929 shows an increase of about 1,200,000 tons over 1928, and about 3,200,000 tons over 1927, confirming what has previously been said in these columns about the future of Italian shipping, which may have some fluctuations, but will always remain one of the most important activities of the country taking into consideration that the greatest part of the Italian imports are originating from overseas countries.

That economic factors, which have nothing to do with the organisation of the ports, are playing an important part in Italian shipping, can easily be seen from the fact that, for example, at Naples trade has shown a decrease of 339,000 tons of wheat and cereals, and 68,000 tons of coal imported in 1929 less than in 1928, while the imports of lumber, oil and general cargo have greatly increased. In connection with shipping at Naples during 1929 the R. Commissariato del Porto has published detailed statistics according to which during the past year 9,140 ships representing 9,880,000 net tons carrying 1,755,000 tons entered the port of Naples, while 9,150 ships representing 9,860,000 net tons cleared the port with 450,000 tons of goods. In order to realise the importance of shipping at Naples it may be as well to consider the following figures relating to the chief items of shipping at Naples:—

IMPORTS.		Tons.
Coal		635,000
Wheat and Cereals		340,000
Other cereals		25,000
Lumber		83,000
Mineral oil		250,000
Other goods		422,000
Total		1,755,000

EXPORTS.		Tons.
Foodstuff		24,000
Cereals and vegetables		50,000
Preserved vegetables		130,000
Fruits		27,000
Macaroni		9,500
Potatoes		33,000
Other goods		176,500
Total		450,000

In addition to these items the statistics also refer to the coal and oil bunkers which have been made at Naples, and it is interesting to note that while coal bunkers have shown a decrease oil bunkers have shown a considerable increase. The Provveditorato del Porto at Venice has published the full statistics regarding shipping there during 1929. Arrivals

included 2,585,350 tons of goods, among which were 1,336,000 tons of coal (1,119,000 tons in 1928) against 2,470,115 tons in 1928; and the departures included 433,585 tons of goods against 345,224 tons during 1928. The growing importance of the port of Venice can be noticed from the fact that it is learned from reliable sources that the Societa di Navigazione Commerciale, which now has its headquarters in Genoa, is to transfer them to Venice to handle the coal imports from the United Kingdom to Venice.

In connection with the construction of new harbour facilities at Leghorn it is understood that the Unione Industriale of the province of Leghorn has applied (1) for the fitting of the new port and the industrial zone with unloading and storage facilities, and for the efficient organisation of the various services in this port; (2) for the construction of a new railway line between Leghorn-Pontedera-Signa-Prato; (3) for the reorganisation of the inland waterways connecting the port of Leghorn to its hinterland. Reference has already been made in these columns to the allowance of 20,000,000 lire by the Italian Government for the reorganisation and enlargement of the Navicelli Canal connecting Leghorn to Pisa and measuring 22 km. in length. This canal handles at present a traffic of about 400,000 tons yearly, but it is anticipated that as soon as it is enlarged it will be accessible to ships of over 600 tons and its trade will practically double.

No less important progress is noticed at small Italian ports taking into consideration that, for example, at La Spezia shipping during 1929 totalled 921,351 tons against 734,000 tons in 1928 and 813,000 tons in 1927.

With reference to the last article regarding the enlargements which are necessary to the drydocking facilities in the port of Genoa through the decision of both the Navigazione Generale Italiana and the Lloyd Sabando to each build a 44,000 tons liner it is understood that in the course of the last meeting of the Consorzio Autonomo del Porto it has been decided to build a 350 metres drydock in addition to the two existing ones, and a loan will be obtained for such purpose from the Treasury according to assurances which have been obtained by Commander Negrotto Cambiaso during his last trip to Rome, when he saw Premier Mussolini, together with H. E. Ciano, the Italian Minister of Communications.

The visit which the Austrian Chancellor, Dr. Schober has made to Premier Mussolini in Rome, has caused reports to circulate, that Austria will obtain a free zone in the port of Trieste, but nothing official has been published in this respect. It is learnt from a reliable source that during the past two weeks important meetings have been held at the Italian Foreign Office to consider the possibility of furthering transit trade both through Fiume and Trieste, and it may be that new facilities to foreign shipping in these ports will arise from these meetings. In the meantime it may be interesting to note the growing exports of beet pulp to the United States of America, while phosphates in vast quantities are imported from America to Sussak but great trouble has been experienced as unloading facilities are very poor.

The funds which have been allotted for harbour enlargements at Bari are not sufficient, and it would appear that further applications have been made at Rome, but new works there have made vast progress recently.

The Banca Commerciale Italiana at Milan announces that it has opened a credit of one million pounds to the Turkish Treasury, and it adds that this operation will lead to new transactions. Nothing official has been published on this subject, but it is understood that this credit is not only in connection with the orders which have been given by the Turkish Navy to the Italian shipbuilding yards, and those which will be given in the course of the near future, but also concerns the construction of new harbour facilities in Turkey under the auspices of Italian firms, and it would appear that identical facilities are to be extended to Greece as it is stated that the Stabilimento Tecnico Triestino at Trieste, which has recently supplied cranes to Pireaus Harbour, is expecting to have similar orders from Saloniki.

In order to ensure the development of shipping at Italian ports, efforts are being made to develop shipping connections with overseas trade centres, and though a further amalgamation of the two existing Italian lines into a single group has been mentioned, the s.s. "Piave" of the Navigazione Libera Triestina, has sailed on her maiden trip on the new service to South Africa via Gibraltar, and the Societa di Navigazione Florio of Palermo has created a new express service from Naples to Palermo and Tripoli enabling one to reach Lybia in 39 hours from Italy while commencing June 1st, 1930, a new service will be established between Naples and Palermo enabling one to reach Sicily in 10 hours and a half instead of 13 and a half as now.



# Irish Harbour Matters.

## Progress of Dublin Port.

**M**R. C. MCGLOUGHLIN has been elected chairman of the Dublin Port and Docks Board for the current year. Mr. Walter Baird has been elected vice-chairman.

Mr. P. J. Lawrence, who held the office of chairman for the past two years, in reply to a vote of thanks for his services, said that the extension and reconstruction of the Alexandra Wharf, of which some 900-ft. had been completed, would, when finished, afford 1,500-ft. of the deepest and best-equipped quay of any port in Ireland. The total sum expended 'o December, 1929, on this work amounted to £118,000. The reconstruction and extension of the fitting-out wharf for the Dublin Dockyard Company was in progress. About 75 per cent. of this work had been completed, at a cost of £5,710. The sum of £10,300 was spent during the year in acquiring property and widening the North Wall Quay. A new electric crane and tramway had been erected in Sir John Rogerson's Quay, at a cost of £6,300. The erection of an additional tobacco warehouse in the Custom House Docks to meet the requirements of the tobacco trade had been practically completed, the cost of which, including machinery, would total £25,000. The electrifying of the Custom House Docks and Warehouses had been carried out at a cost of £2,800.

From this it would be seen that heavy expenditure was incurred during the year. All this expense had been made towards the development of the port in order to provide a high standard of efficiency to meet the needs of present and future trade.

The trade of the port had been well maintained, and signs of improvement had continued. The total register tonnage of vessels entering the port in 1929 amounted to 2,340,634 tons, an increase over last year's figures of 48,522 tons. The 1929 tonnage figures constituted a record with the exception of the year 1914, when on the outbreak of war numbers of vessels were diverted to Dublin.

The conversion of short-term Mortgage Bonds into the Board's 5 per cent. Stock had continued, the amount of Bonds outstanding, which stood at £686,100 in 1924, having been reduced to £73,767 at the end of 1929.

The Dublin Port and Docks (Bridges) Bill, providing for the rebuilding of Butt Bridge and the building of a transporter bridge at Guild Street, became law on April 26th, 1929, and the Engineer's staff were now engaged preparing plans to be submitted for the approval of the Minister for Local Government and Public Health.

Mr. Lawrence concluded by stating that the Board's finances were in a sound condition and that the prosperity of the Board continued.

It was decided that the Standing Committee of the Board shall consist of all the members.

## Cork Harbour Development.

The elaborate proposals for the development of Cork Harbour made by Mr. Joseph N. Mullan, Executive Vice-President of the Ireland Corporation of America, have not met with whole-hearted approval from the members of the Cork Harbour Board. The Ireland Corporation is said to control sixty million dollars for investment in this country. Mr. Jeremiah J. Collins, its Engineer, after inspecting the harbour, favours the use of a site at Cuskinny or at Queenstown (Cobh). Adequate means for disembarking passengers or discharging cargo can be made available at both places through the construction of a pier connected with the Great Southern Railway system, or at the deep-water quay at Queenstown by the erection of wharves and the deepening of the river channel to that point.

The latter site would be the more economical, as the railway terminus at Queenstown is located at this quay, while alongside, at White point, is the proposed seaplane base now being considered by the Harbour Board. This site, it is believed, would meet the requirements of the shipping Companies concerned, and the elimination of the tender services would probably induce a larger number of visitors to land at the port. If the wealthier type of American visitor to Europe could be induced to include Ireland in his tour, it would be of great value to the Irish Free State.

Mr. Richard Wallace, Chairman of the Harbour Board, believes that the establishment of a free port should form part of the scheme of development. The tractors manufactured in Ford's Marina works are exported to all parts of the world in ships that arrive light, and Mr. Wallace has expressed the view that these might carry goods inward for storage at Queenstown or elsewhere if a free port area was established.

## Buncrana Harbour Extension.

In connection with the extension of Buncrana Harbour, Co. Donegal, the Irish Free State Government has agreed

to make a grant of £18,000 and also to provide a loan of £6,000 repayable over a term of 35 years. The Harbour Board will be formed partly of local ratepayers interested.

## Improving Bangor Harbour.

The Bangor, Co. Down, District Council has approved of a scheme of improvement of the harbour which will involve an expenditure of £30,000, and in addition £4,000 for the reconstruction of the timber end of the old pier. The plan provides for the throwing out of an arm 300-ft. long and 30-ft. wide in a westerly direction from the extreme end of the concrete work of the new pier, the scrapping of the woodwork end of the new pier, and using the greenheart piles of this structure for the reconstruction of the existing wooden portion of the old pier.

## Working of Cork Harbour.

Some interesting figures are given in the report and statement of accounts of the Cork Harbour Commission for the year ended July 31st, 1929.

Mr. F. J. Scannell, the Auditor, in his report to the Commissioners, having certified the accounts, writes:—

"The comparative figures for hire of plant for the two years ending July 31st, 1929, are as follows:—

	31st July, 1928	31st July, 1929
Gross amount received	£ 179 4 6	£ 80 0 7
Less working expenses	65 13 0	—
Net	£113 11 6	£80 0 7

"It will be observed from the revenue account that the surplus income for the year amounted to £2,911 3s. 11d. This sum is transferred to net revenue account, the debit balance on which now amounts to £1,617 9s. 6d.

"The income from tonnage dues and dues on goods for the year amounted to £84,823 11s. 5d., as compared with £81,241 6s. 10d. for the preceding year, an increase of £3,582 4s. 7d.

"From your records it appears that a large portion of the plant and machinery, barges, etc., is very old. In my opinion, the renewal fund is entirely inadequate to provide for replacements and additions.

"A sum of £100 Consolidated 4 per cent. Redeemable Stock was brought in and extinguished during the year by means of the sinking fund.

"The contributions from revenue to reserve, contingency, and Insurance Fund should be increased, as, in my opinion, this fund is not sufficient to provide against marine, etc., insurance risks and other contingencies."

Mr. James Price, Engineer to the Cork Harbour Commissioners, reports that the quays, piers, wharves, and other property of the Commissioners in the port of Cork have been maintained in good and proper order, and that the plant and machinery are working efficiently. This reports continues:—

"The accounts show the value of your plant as £65,157 14s. 9d., or £2,671 1s. 11d. more than in 1897.

"The cost of maintenance dredging, inclusive of pumping, for the year is £20,371 3s. 9d. for an output of 519,777 tons, and cost per ton 9.4d., or 1.1d. less than last year. The output is 159,777 tons over the standard, and thus reduces the arrears of dredging to 726,791 tons. The capital dredging cost £595 10s. 8d. for 24,409 tons; cost per ton, 5.9d.

"The special works for the year were reconstruction works at Victoria Quay Wharf and renewing various wharf and quay surfaces in concrete and works at Tivoli."

The cost of harbour maintenance during the period covered was £30,892 1s. 5d., as against £27,332 3s. 4d. for the year ended July 31st, 1928.

River and quay repair works cost £6,675 9s. 11d., as against £9,972 7s. 9d. in the previous year.

The amount spent on piers and quays, Lower Harbour, was £971 4s. 1d.

The total expenditure for the year ended July 31st, 1929, was £84,916 8s. 5d., as compared with £83,681 9s. 8d. the year previous.

## Elbe Inland Shipping.

The level of the water in the Upper Elbe is dropping as a result of the cold weather in the interior. Between Aussig and Magdeburg the water is very low and draughts are limited to mts. 1.50 from Havelberg to Lauenburg. Business is restricted and in the absence of demand freight rates remain low.

## Lippe-Seiten Canal.

Trial traffic was opened on the newly-built part of the Lippe-Seiten-Canal between Dorsten and Datteln. It is expected that the first part of the canal to Wesel will be completed in April.